



Te Reo
the Journal of the Linguistic
Society of New Zealand

Volume 69

Issue 1

Research Article

2026

Pages 1–51

March, 2026

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This paper is a peer-reviewed contribution from <https://www.nzlingsoc.org/journal/current-issue/>

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Editor: Victoria Chen

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Abstract

This study examines immediate precedence constructions (IMPREC), which are complex sentence constructions that encode ‘right before event X, event Y occurs’, across a wide range of languages. IMPREC has not previously been studied in detail, and this study is the first to investigate it by using a sample of 50 languages from 26 lineages (22 language families and 4 language isolates). The results indicate that, first, many IMPREC constructions are not derived from ‘before’ constructions. Second, unlike ‘before’ clauses, negators rarely appear in IMPREC clauses as there is no need to disambiguate the IMPREC function from other temporal relations. Moreover, IMPREC clauses commonly denote an event which is pragmatically assumed to be unrealized. Third, IMPREC clauses most commonly precede figure clauses. Fourth, some IMPREC clauses are downgraded, e.g. the verb is marked by a nominalizer. Finally, a strong irrealis marker is not found to block the use of a weak irrealis marker, nor is a specialized IMPREC marker found to block the use of an irrealis marker. This study shows that IMPREC and ‘before’ are two distinguished functions, encouraging linguists to examine IMPREC in grammatical descriptions.

Keywords

immediate precedence, morphosyntax, typology, negation, irrealis

1 Introduction

This study explores immediate precedence constructions across languages. Immediate precedence (IMPREC) encodes a temporal relation of ‘right before event X, event Y occurs’ or ‘when event X is about to occur, event Y occurs’. There is a gap in the literature that specifically examines this function. In cross-linguistic typological work, other temporal relations like ‘when’, ‘before’, ‘until’, ‘after’ and ‘as soon as’ are studied in-depth but there is no discussion or even mention of IMPREC (Hetterle, 2015; Kortmann, 1997; Olguín Martínez, 2021; Cristofaro, 2003; Wälchli, 2018). Moreover, few grammatical descriptions have a dedicated discussion on IMPREC, e.g. the grammars of Japhug (Jacques, 2021) and Cavineña (Guillaume, 2008). In most literature, IMPREC is not treated as a specific function, and therefore the incentive to examine IMPREC is weak.

Attention to IMPREC may be limited because it is assumed to be expressed merely by modifying an item or construction expressing ‘before’. In English, for example, IMPREC can be expressed by modifying *before* with *right*, as in *right before I arrived home, my brother called me*. In Japhug, by contrast, IMPREC constructions are marked by the linker *txk^ha* ‘about

to¹ with a factual non-past verb like *amboɤ* ‘burst’ (1). They are not modified versions of general precedence (GENPREC) ‘before’ constructions (2).

(1) Japhug (Sino-Tibetan)

amboɤ trk^ha tɛe tɛe juu-mu-a tɛe, tɛe a-jaɤ
 burst:FACT about.to LNK LNK SENS-be.afraid-1SG LNK LNK 1SG.POSS-hand
juu-muunmu juu-ɛti q^he.
 IPFV-move SENS-be:AFF LNK

‘(When I was aiming), as the gun was about to burst (i.e. to go off), I was afraid and my hand moved.’ (Jacques, 2021, p. 1399)

In (1), even though the verb *amboɤ* ‘burst’ is in the factual non-past form, this IMPREC construction expresses past events like ‘was about to burst’ and ‘was afraid’. On the other hand, a general precedence ‘before’ construction is marked differently, containing *ɛuŋgu* ‘before’ and an imperfective verb form like *juu-si* (IPFV-die) in the ‘before’ clause (2).

(2) *juu-si ɛuŋgu pu-nu-NGɾt-ndzi.*

IPFV-die before AOR-AUTO-ACAUS:separate-DU

‘They had divorced before she died.’ (Jacques, 2021, p. 1399)

This raises the question—across languages, does IMPREC tend to be expressed with a modified version of a general precedence ‘before’ construction? If not, we can categorize IMPREC as a conceptually similar but different function from general precedence ‘before’, similar to how ‘as soon as’ (roughly ‘right after’) is considered different from ‘after’. Hence, field linguists may need to consider discussing IMPREC in grammatical descriptions, and typologists in cross-linguistic work. To answer this question, we need to compare the strategies expressing IMPREC and ‘before’ (GENPREC) across languages.

Different patterns of negation in IMPREC and GENPREC constructions deserve deeper examination. Negation interacts with GENPREC in three different ways. In some languages, GENPREC is obligatorily expressed with a negator. In Lakhota (3), the negator *ni* is required in past tense GENPREC constructions (Buechel, 1939, p. 251; Thompson et al., 2007).

(3) Lakhota (Siouan)

T'e ni it'okab c'inca-pi kin wahokon-wica-kiye.
 die NEG before child-PL the admonish-3PL.PATIENT-admonish

‘Before he died, he admonished his children.’

(Buechel, 1939, p. 251; cited by Thompson et al., 2007)

In other languages, a negator can optionally occur in a GENPREC clause without altering the overall meaning of the construction (Wälchli, 2018). In Cantonese (4), 未 *mei6* ‘not yet’ in a GENPREC clause is optional, used expletively (Matthews & Yip, 2011, p. 344).

¹ According to Jacques (p.c.), *trk^ha* ‘about to’ cannot appear in an independent clause, expressing ‘X is about to happen’.

(4) Cantonese (Sino-Tibetan)

我 (未) 去 美國 之前 仲 諗-住 做 醫生 嘅
ngo5 mei6 heoi3 mei5gwok3 zilcin4 zung6 nam2-zyu6 zou6 jilsang1 ge3.
 1SG not.yet go America before still think-CONT work doctor SFP
 ‘Before I went to America I was intending to be a doctor.’

(Matthews & Yip, 2011, p. 344; my romanization (i.e. Jyutping) and glosses)

In other languages, a negator cannot occur in the GENPREC clause. In Fongbe (5), the GENPREC clause is marked by *có* ‘before’, where a negator cannot occur (Lefebvre & Brousseau, 2002, p. 172).

(5) Fongbe (Atlantic-Congo)

có b̀̀ à ná wá ́, Kòkú kò yì.
 before COMP 2SG DEF.FUT arrive DEF Koku ANT leave

‘Before you had arrived, Koku had left.’ (Lefebvre & Brousseau, 2002, p. 172)

In summary, a negator may be obligatory, optional, or forbidden in GENPREC clauses across languages. Olguín Martínez (2023) provides evidence that the functionality of a clause-linking marker can predict the existence of a negator in a GENPREC clause. A negator tends to be licenced in GENPREC clauses where the clause-linking marker is polyfunctional, i.e. it serves not only GENPREC but also other temporal relations like ‘until’ and ‘after’. Moreover, optional negators are only found with a monofunctional clause-linking marker that expresses GENPREC but no other temporal relations. Nonetheless, such a monofunctional GENPREC marker tends not to be used with a negator. In other words, the presence of a negator may disambiguate the ‘before’ function from other temporal relations. When a GENPREC marker is monofunctional, a negator is not needed for disambiguation. A negator may be used for disambiguation because the event in a GENPREC clause has not yet happened by the time of the event in the figure (or main) clause. Therefore, GENPREC clauses are conceptually negative (Thompson et al., 2007, p. 247) and a negator can specify this negative meaning.

Given that IMPREC is conceptually close to GENPREC, can we find a similar pattern of negation in IMPREC clauses (i.e. clauses that encode ‘right before event X’)? Answering this research question deepens our understanding of the relation between negation and temporal relations, and the differences and similarities between IMPREC and GENPREC.

This study is organized as follows: Section 2 discusses the definitions of key terms. Section 3 discusses the methods and data used in this study. Section 4 explores strategies to express IMPREC that are derived from GENPREC constructions. Section 5 examines strategies to express IMPREC that are not derived from GENPREC constructions. Section 6 discusses general properties of IMPREC constructions, including negation (6.1), clausal order, temporal domains (6.2), downgrading and irrealis marking (6.3). Section 7 concludes this study.

2 Definitions

This study aims to examine different strategies of expressing immediate precedence (IMPREC) and its relations with negation. Before these discussions, definitions of key concepts are needed, followed by the data and methods adopted (Section 3).

To conduct cross-linguistic comparison, a comparative concept of IMPREC construction is required. A comparative concept is based on universal conceptual-semantic concepts and universal formal concepts, disregarding language-specific semantic and formal categories (Haspelmath, 2010, p. 664).

Comparative concept of an immediate precedence construction

An immediate precedence construction is a complex sentence construction that encodes immediate precedence: ‘right before event X, event Y occurs’. Event X can be realized or non-realized.

A complex sentence construction consists of two clauses that describes two situations (Longacre, 1985, p. 255). A clause is a unit minimally containing a predicate that may take arguments or modifiers (Gast & Diessel, 2012, p. 4). We also include examples where ‘event X’ is encoded as a noun (phrase), e.g. ‘right before the war,...’. Immediate precedence expresses a temporal sequence of ‘right before event X, event Y occurs’ or ‘when event X is about to occur, event Y occurs’. The term “immediate precedence” is adopted from the grammar of Japhug (Jacques, 2021), one of very few grammatical descriptions with a dedicated discussion of IMPREC. IMPREC is considered a “temporal relation”, a function that encodes the relation between (at least) two events from a temporal perspective. For example, ‘before’ expresses general precedence of ‘before event X, event Y occurs’; ‘after’ expresses anteriority of ‘after event X, event Y occurs’.

In this study, a clause meaning ‘right before event X’ or ‘when event X is about to occur’ is called an IMPREC clause while a clause with ‘event Y’ is called a figure clause, following Olguín Martínez (2021). “Figure” has been employed for examining locative relations like ‘the bottle is on the floor’, where the figure ‘bottle’ is viewed relative to the ground ‘on the floor’ (Talmy, 2000, p. 311). In this study, “figure” is used in a temporal sense, referring to a clause that is viewed relative to another clause, i.e. IMPREC clause. Some may suggest using the term “main clause” instead of “figure clause” but the former may imply that all IMPREC constructions are adverbial subordination, which is inaccurate. We do not restrict IMPREC clauses to non-argument clauses that “function as adjuncts to a particular element of a main clause (or figure clause) in a complex sentence” (Schmidtke-Bode & Holger, to appear, p. 2; my parenthesis). An IMPREC clause can be an argument or non-argument (or modifier) of figure clauses. Moreover, the event in the IMPREC clause can be realized or non-realized. For example, in *We entered the theater right before the movie started*, the event in the IMPREC clause is realized, i.e. the movie did start. By contrast, in *He caught the vase right before it hit the ground*, the event in the IMPREC clause is not realized, i.e. the vase did not hit the ground.

An IMPREC clause or figure clause may or may not take a clause-linking device. Consider example (6) where both clauses are labelled, circumscribed by square brackets.

- (6) a. [He was about to embark on a European trip]_{IMPREC} [when he felt sick]_{figure}.
 b. [He felt sick]_{figure} [right before embarking on a European trip]_{IMPREC}.
 c. [When he was about to embark on a European trip]_{IMPREC}, [he then suddenly felt sick]_{figure}.
 d. [About to embark on a European trip]_{IMPREC}, [he suddenly felt sick]_{figure}.

In (6a), although the second clause contains a clause-linking device *when*, it is treated as a figure clause here because it is viewed relative to the first IMPREC clause. In (6b), the second clause is the IMPREC clause marked by *right before*. In (6c), both clauses are marked by a clause-linking device, i.e. *when* and *then*. The first clause is the IMPREC clause because it contains the phrase *was about to*. In (6d), no clause-linking devices are used. The first clause is treated as an IMPREC clause and the second clause as a figure clause.

General precedence (GENPREC) constructions are understood here in the same way as IMPREC constructions, with the only difference lying in their functions. That is, a GENPREC construction is a complex sentence construction encoding general precedence: ‘before event X, event Y occurs’. Unlike IMPREC, GENPREC does not specify whether event X and event Y are separated by a minimal time gap. The clause that encodes ‘before event X’ will be called a “GENPREC clause” and the clause that encodes event Y a “figure clause”.

Immediate precedence expresses an “immediate” sequence between two events. Nonetheless, what temporal sequence is considered immediate is vague and can be subjective. Consider two examples of IMPREC constructions in English (7—8).

(7) *Right before he played the last song he said “Where are my angels? Stand up...”*
(COCA)

(8) *We lived in Sweden right before moving here.*
(COCA; <https://www.english-corpora.org/coca/>)

In (7), the time interval between ‘said’ and ‘played the last song’ is expected to be minimal, e.g. a few seconds. By contrast, in (8), even though ‘lived in Sweden’ and ‘moving here’ form an IMPREC construction marked by *right before*, the temporal interval between two events cannot be a few seconds. This implies that the immediacy meaning can be vague and subjective (subjective meaning of immediacy is also found in ‘as soon as’ constructions; Lui (2023)).

3 Data and methods

This study opts for convenience sampling, looking for as many distinct strategies as possible. The data are primarily collected from grammatical descriptions accompanied by other literature, the Corpus of Contemporary American English (COCA) and the LIHKG forum² where Cantonese is used.³ We cannot properly balance phylogenetic or areal factors because IMPREC constructions are rarely found in the literature. Overall, 50 languages from 26 lineages (22 language families and 4 language isolates) are found with IMPREC constructions. They are used in macro-areas including Africa, Australia, Eurasia, North America, Papunesia and South America (Table 1). The language family and source(s) of these 50 languages are listed in Table A1 in Appendix A.

² <https://lihkg.com/category/1>

³ COCA and LIHKG forum are used to look for natural language examples in both English and Cantonese—two languages that the author is familiar with.

Table 1. 50 languages examined in this study

Macro-areas	Languages	Sum
Africa	Wolaytta; Ma'di; Mungbam	3
Australia	Bininj Gunwok; Diyari; Djinba; Innamincka; Ngan'gityemerri	5
Eurasia	Sri Lanka Malay; English; Russian; Modern Eastern Armenian; Tamil; Tundra Nenets; Japhug; Cantonese; Karbi; Limbu; Purik Tibetan; Qiang; Bjokapakha; Duhumbi; Shǐxīng; Daai Chin; Xiang dialects; Tshangla	18
North America	Ute; Central Alaskan Yupik	2
Papunesia	Balantak, Toqabaqita, Rapa Nui, Momu, Savosavo, Komnzo, Abawiri, Konai, Coastal Marind, Urama, Bargam, Duna, Kaluli, Nukna, Adang	15
South America	Cavineña; Paunaka; Yauyos Quechua; Movima; Yurakaré; Kwaza; Mapuche	7
		50

IMPREC constructions are commonly found in Eurasia and Papunesia (Table 1). This may not imply that an IMPREC constructions is an areal feature of Eurasia and Papunesia—it may be found in other macro-areas but it is not yet reported in the literature. Given this imbalanced data, this study can only give a preliminary account of this construction. Future studies can expand the scope of languages when more data is available.

Identifying an IMPREC construction is somewhat challenging. While some grammatical descriptions have a dedicated discussion, most grammars do not. To this end, this study needs to search for terms such as ‘just before’, ‘right before’, ‘shortly before’, ‘about to’, etc. Although this method could be biased by the translation of examples, this is the most conceivable method (Table B1 in Appendix B lists strategies for expressing IMPREC).

To identify the strateg(ies) in one language, we focus on essential items that express IMPREC. Consider two examples of IMPREC constructions in English:

- (9) *Right before I sung, someone threw a flower at me.*
- (10) *Right before I sung, suddenly someone threw a flower at me.*

Examples (9) and (10) have one minimal difference—while (9) contains *suddenly*, (10) does not. Although *suddenly* contributes to the IMPREC meaning, it is optional. In this case, the strategy of expressing IMPREC is using *right before*. Optional items that contribute to the IMPREC meaning will be discussed below. A limitation of this method is that some grammatical descriptions only have one example of IMPREC construction, which may contain multiple items contributing to the IMPREC meaning. In these cases, it is difficult to identify

which item is required to express IMPREC. Consider an IMPREC construction in Tundra Nenets (11).

(11) Tundra Nenets (Uralic)

xā-wa-nt^o *n'er^oc'una* *wark^o-m* *xada^o-wa-c*^o.
 go-IPFV.AN-GEN.2SG right.before bear-ACC kill-1PL-PST

‘We had killed a bear shortly before you left.’ (Nikolaeva, 2014, p. 82)⁴

In (11), besides *n'er^oc'una* ‘right before’, some items contribute to the IMPREC meaning. The imperfective action nominal *-wa* indicates that *xā* ‘go, leave’ happens after *xada^o* ‘kill’ (Nikolaeva, 2014, p. 108). A perfective verb like *xada^o* ‘kill’ with a past tense marker like *-c^o* denotes a remote-past event which temporally precedes another event like *xā* ‘go, leave’ (Nikolaeva, 2014, pp. 9; 82). The genitive *-nt^o* follows the action nominal suffix *-wa* when a postposition like *n'er^oc'una* ‘right before’ is used (Nikolaeva, 2014, p. 369). Example (11) is the only IMPREC construction found in the grammatical description of Tundra Nenets (Nikolaeva, 2014). With the method proposed here, the strategy of expressing IMPREC consists of *n'er^oc'una* ‘right before’, the imperfective action nominal *-wa* and the past tense marker *-c^o*. The same method is used to identify strategies for expressing GENPREC. When a strategy consists of multiple items, this strategy is more likely to specifically express IMPREC without serving other temporal relations. It is also important to note that a language may have more than one way to express IMPREC but these strategies may not all be reported in the grammar.

To answer our second research question regarding negation in IMPREC and GENPREC clauses, we also pay attention to the existence of negators. It is hard to decide if a negator is “obligatory” or “forbidden” in IMPREC clauses because this information is rarely found in grammatical descriptions. Rather than using such strong terms, we will use “always found” to refer to IMPREC clauses which contain a negator in all examples in the sources. Similarly, we will use “not found” to refer to IMPREC clauses where a negator is not found in any examples in the sources. A negator is called “optionally found” when it appears in some but not all IMPREC clauses. Subsequently, strategies to express IMPREC are identified as monofunctional or as polyfunctional when they serve other temporal functions like ‘until’ and ‘when’. Table C1 in Appendix C and Table D1 in Appendix D list negation patterns in IMPREC clauses and GENPREC clauses respectively.

After reviewing the methods and data, different strategies of expressing IMPREC are discussed below. This paper will gradually differentiate IMPREC and GENPREC, demonstrating that they are distinct. Therefore, we will first discuss IMPREC constructions that are derived from GENPREC constructions (Section 4) and subsequently IMPREC constructions that are not derived from GENPREC constructions (Section 5). While more examples and descriptions are dedicated to IMPREC constructions, the strategies of GENPREC constructions will be briefly remarked on. For detailed discussion on how ‘before’ is expressed, see Olguín Martínez (2021).

⁴ In the original text, *n'er^oc'una* is glossed as ‘before’ (Nikolaeva, 2014, p. 82). Nonetheless, it is also glossed as ‘right before’ (Nikolaeva, 2014, p. 369). Since it is only used as a specialized IMPREC marker in Nikolaeva (2014), it is glossed as ‘right before’ in (11).

4 IMPREC constructions derived from GENPREC constructions

This section examines IMPREC constructions that are derived from GENPREC constructions. A GENPREC-expressing item may co-occur with another item that contributes to the immediacy meaning, as in *just before* and *shortly before*. Surprisingly, this pattern is not common in the data collected. It is found in Cantonese where an IMPREC construction is introduced by two subordinators in the same clause, i.e. — *jat1* ‘as soon as’ and 前 *cin4* ‘before’ (12).

(12) Cantonese (Sino-Tibetan)

— 落 水 前 , 就 開 車 門
jat1 lok6 sei2 cin4 zau6 hoi1 ce1 mun4.
 as.soon.as down water before then open car door

‘Right before (a bus) falls into water, (the bus driver) should open the doors (so that the passengers can escape).’ LIHKG, 2024; <https://lihkg.com/thread/3798102/page/5>; my romanization, i.e. Jyutping, and glosses)

To express IMPREC (12), a GENPREC clause marked by the subordinator 前 *cin4* ‘before’ is modified by another subordinator — *jat1* ‘as soon as’. The figure clause ‘should open the doors’ is introduced by 就 *zau6* ‘then’. Logically, ‘as soon as’ and ‘before’ express two opposite event orders. In an ‘as soon as’ relation such as ‘as soon as event X occurs, then event Y occurs’, event X occurs before event Y. By contrast, in a ‘before’ relation like ‘before event X occurs, event Y occurs’, event Y occurs before event X. The reason why they can express IMPREC together is explained as follows. In a GENPREC construction, a GENPREC clause indicates a time range in which the event in a figure clause can occur. For instance, for ‘before I run, I drink water’, ‘drinking water’ can occur ten seconds, ten minutes or one hour before ‘running’. When an ‘as soon as’ marker is used in a GENPREC clause, the temporal gap between ‘drinking water’ and ‘running’ is specified to be minimal. In other words, ‘as soon as...before’ indicates an IMPREC construction such as ‘right before I run, I drink water’ (Lui, 2022; 2023). In IMPREC constructions, the meaning of 就 *zau6* ‘then’ is bleached. In a construction of *X* 就 *zau6* *Y* ‘X then Y’, event X happens before event Y. Nonetheless, in (12), the event X 落水 *lok6sei2* ‘fall into water’ occurs after the event Y 開車門 *hoi1ce1mun4* ‘open the doors’, i.e. the event order is ‘Y then X’ rather than ‘X then Y’.

In Balantak, an IMPREC construction consists of *sian-po* (NEG-IPFV) ‘before’ and *liu-liu* ‘immediately’ (13).

(13) Balantak (Austronesian)

Sian-po tia barituru a siok rowo' i-ya'a, liu-liu kana' bantal.
 NEG-IPFV with cock.fight ART chicken wild D-DEM3 immediately hit trap
 ‘Before the wild chicken can fight, he is immediately caught in the trap.’
 (van den Berg & Busenitz, 2012, p. 236)

In (13), *sian-po* ‘before, not yet’ consists of the negator *sian* and imperfective *-po*. The immediacy meaning of IMPREC is expressed by *liu-liu* ‘immediately’ which is a reduplication of *liu* ‘go past, pass by’ (van den Berg & Busenitz, 2012, p. 155). Although GENPREC

constructions marked by *sian-po* are not reported in van den Berg and Busenitz (2012), example (13) is likely to be derived from GENPREC constructions because ‘not yet’ is a common way to express GENPREC across languages (Wälchli, 2018). Moreover, van den Berg and Busenitz (2012, p. 235) also explicitly state that *sian-po* is a GENPREC marker.

In conclusion, IMPREC constructions are rarely derived from GENPREC constructions, based on our data. Nonetheless, this could be because IMPREC constructions are not identified as structures different from GENPREC constructions. If IMPREC constructions are significantly different from GENPREC constructions in terms of their structures, the chance of a grammar writer to report IMPREC constructions would be higher than when these two constructions are structurally similar. Moreover, a language may have multiple ways to express IMPREC. Even though IMPREC constructions that are not derived from GENPREC constructions are reported in a grammatical description, IMPREC constructions that are derived from GENPREC constructions may exist in a given language, but they are simply not reported.

5 IMPREC constructions that are not derived from GENPREC constructions

This section discusses IMPREC constructions that are not derived from GENPREC constructions. They may be expressed in different ways including specialized IMPREC markers, imminent markers, ‘want’, verbs like ‘come’ and ‘go’, future tense, irrealis, mirative, purposive, inceptive, locational markers and asyndetic constructions. While most strategies are used as verbal categories, locational markers are (prototypically) used nominally. Unlike other strategies, asyndetic constructions do not contain a marker that denotes IMPREC.

5.1 Specialized IMPREC marker

IMPREC constructions can be introduced by a specialized IMPREC marker that only expresses IMPREC without other known functions. This function encodes a temporal sequence between two or more events whereas markers expressing ‘X is about to happen’ can express one event only (Section 5.2). Examples of specialized IMPREC markers include the linker *trk^ha* ‘about to’ with a factual non-past verb in Japhug (1) and *n'er^oc'una* ‘right before’ in Tundra Nenets (11).

5.2 Imminent marker

Imminent markers denote an event that is about to happen (Kuteva et al., 2019). These markers can encode one event only, e.g. ‘I am about to sleep’, whereas a specialized IMPREC marker always encodes more than one event (Section 5.1). In some languages, an imminent marker can not only express IMPREC, but also other meanings such as ‘try’ in Komnzo (17–18).

Imminent markers may be labelled differently but they express very similar meanings, e.g. potential *-mijt'* ‘about to occur but has not’ in Djinba (14).

(14) Djinba (Pama-Nyungan)

<i>nyuni</i>	<i>balipu-ngur</i>	<i>nyinuk</i>	<i>gar-mitj</i>	<i>guwang,</i>	<i>ngarr</i>	<i>ban</i>
2SG.NOM	this(near)-ABL	what.TEMP	go-POT	this.ALL	1SG.NOM	DISTR
<i>nyuw+arr</i>	<i>wandja-n</i>	<i>bilak</i>	<i>ngayil.</i>			
2SG.DAT+1SG.NOM	wait-PRES	FRAME	first/before			

‘Whenever you might be about to come here to this place, I will have been waiting for you beforehand.’ (Waters, 1989, p. 386)

In Djinba (14), an IMPREC construction consists of *nyinuk* ‘when’ and the potential *-mijt* ‘about to occur but has not’. This potential suffix is not productive—its meaning is usually expressed with a future tense or irrealis marker (Waters, 1989, pp. 175; 193). No GENPREC constructions are found in the grammatical description of Djinba (Waters, 1989). In Qiang (15), an IMPREC construction is marked by the prospective *-a:* ‘be going to V’. The prospective *-a:* can also express ‘about to V’ (LaPolla & Huang, 2003, p. 166).

(15) Qiang (Sino-Tibetan)

qa tha-s-ka the: me'za:-ŋi the: lu-ji.
 1SG that:one-day-LOC 3SG look.for:PROS-ADV 3SG come-CSM

‘Just when I was going to (go) look for him, he came.’ (LaPolla & Huang, 2003, p. 162)

In Qiang (15), the prospective *-a:* ‘be going to V’ can denote an event realized in the past, or an event that did not realize, e.g. *me'zə* ‘look for’. The prospective *-a:* replaces the root vowel of a verb when that vowel is /a/ or /ə/, and therefore *me'zə* ‘look for’ is realized as *me'za:* (LaPolla & Huang, 2003, pp. 161—162). While IMPREC clauses are not found with a negator, GENPREC constructions are marked by a negator *ma-* and continuative *-tei* (16).

(16) *qa stuaha ma-tei-tehə-te, japə xuəla.*

1SG rice/food NEG-CON-eat-GEN hand wash

‘Before I eat, I wash my hands.’ (LaPolla & Huang, 2003, p. 241)

In Komnzo, the imminent marker *n* expresses an intentional reading ‘be about to do X’. It can express IMPREC when multiple events are involved (17). It can also express ‘try to do X’ (18). No GENPREC constructions are reported in the grammatical description of Komnzo (Döhler, 2018).

(17) Komnzo (Yam)

fobo ffé n wawa kwa\näbü/nzrmth (.) kwosi
 DIST.ALL really IMN yam 2|3PL:SBJ:PST:DUR/decompose rotten
kwa\ko/nzrmth bänemr e (.) tayo tfotfo.
 2|3PL:SBJ:PST:DUR/become RECOG.PURP until ripe almost

‘When those yams were about to fall apart, about to become rotten, the yams (in the ground) were almost ready.’ (Döhler, 2018, p. 402)

(18) *zbo n zrä\thb/é yare kwosi=fo.*

PROX.ALL IMN 1SG:SBJ>3SG.F:OBJ:IRR:PFV/put.inside bag old=ALL

‘I will try and put it here...in the old bag.’ (Döhler, 2018, p. 150)

An item meaning ‘almost’ can mark an IMPREC clause. In Japhug, the proximative prefix *ju-* appears in an IMPREC clause (19). It can denote a negative event in the past like ‘he almost

killed me (=he didn't kill me) '(20). It can also denote an event that is about to happen, e.g. 'He is about to fall asleep' (Jacques, 2021, p. 1166).

(19) Japhug (Sino-Tibetan)

εxr ju-jɣ-azyut tæ (...) u-kɣrme nu pjɣ-εu-nqov.
 night PROXM-AOR-arrive LNK 3SG.POSS-hair DEM IFR-CAUS-hang

'Just before the night fell, (the witch) hung her hair (on the window of the tower).'
 (Jacques, 2021, p. 1400)

(20) *zuumi ju-pú-wy-sat-a.*

almost PROXM-AOR-INV-kill-1SG

'He almost killed me.' (Jacques, 2021, p. 1165)

The proximative prefix *ju-* often co-occurs with the aorist *jɣ-* that marks a past event (Jacques, 2021, p. 1165). *Ju-* can not only express IMPREC (19), but also an (undesirable) action that was almost realized but not completed, e.g. *sat'* kill '(20) (Jacques, 2021, p. 1165). GENPREC constructions in Japhug are marked by *εuŋgu'* before 'and an imperfective verb, see example (2).

5.3 'Want'

IMPREC is commonly expressed by an item meaning 'want'. This item may express two semantically close meanings—desire and intention—in a given language. In some grammatical descriptions, whether an item meaning 'want' expresses desire, intention, or both is not specified, and therefore they are discussed together in this section. To start the discussion, we may first consider an example in Duna where the intensitive *-nda* 'want to, plan to' is used (21).

(21) Duna (Trans-New Guinea)

Wakili-ka kho khene-nda ka-ta stori paluni mbatia inu-ta
 PSN-CS 3SG die-INT be/stand-SEQ talk legacy some 1/2PL-LOC
ruwa ngu.

say give.PFV

'Wakili when she was about to die gave some final advice to us.'

(San Roque, 2008, p. 105)

In (21), the intensitive *-nda* 'want to, plan to' follows *khene* 'die'. *-nda* is likely to express IMPREC rather than 'wanting or planning to die'. Although *-nda* typically denotes a future event (San Roque, 2008, p. 283), it can be used to denote past events like 'was about to die' (21). *Ka-* 'stand' may express an inceptive meaning when it follows a state, e.g. *lembo ka-ya* (anger be/stand-DEP) 'became angry' (San Roque, 2008, p. 265). This function may be applicable to *khene* 'die', i.e. *khene-nda ka* (die-INT be/stand) may express 'becoming dead' which is semantically similar to the IMPREC meaning 'when Wakili was about to become dead...'. The sequential marker *-ta* indicates the temporal sequence of two clauses. GENPREC constructions are not found in the grammatical description of Duna (San Roque, 2008). Interestingly, in two Papuan languages, Momu (Baibai-Fas) and Bagram (Trans-New Guinea), IMPREC constructions are marked by desiderative items derived from an item meaning related

to ‘say’. In Momu, the desiderative/inceptive =*meni* is grammaticalized from =*m yeni* (OBL say.to) in which the oblique =*m* functions as a complementizer (Honeyman, 2016, p. 411). In Bargam, the desiderative -*nan* is grammaticalized from *nan* ‘talk, speech, language’ (Hepner, 2006, pp. 31; 76).

In Xiang, an IMPREC construction is marked by an adverb like *tsən⁴⁵ man¹³* ‘just about’ and an auxiliary *iau⁴⁵* ‘to want’ (22).

(22) Xiang (Sino-Tibetan)

我 正 蛮 要 出 去, 她 就 来 哒。
ŋo⁴¹ tsən⁴⁵ man¹³ iau⁴⁵ tɛ^hy²⁴k^hɣ²⁴, t^ha³³ tɛiəu²¹ lai¹³ ta²¹
 1SG just.about to.want to.go.out 3SG then to.come ASP
 ‘She came when I was just about to go out.’ (Wu, 2005, p. 142)

In an IMPREC construction (22), the auxiliary *iau⁴⁵* ‘want’ always follows an adverb *tsən⁴⁵ man¹³* ‘just about’ which can be replaced by *kan³³ xo²⁴* ‘just about’ or *ŋan¹³ xo²⁴* ‘just about’. The IMPREC clause always refers to a past action like *tɛ^hy²⁴k^hɣ²⁴* ‘to go out’ (Wu, 2005, p. 142). *Tɛiəu²¹* ‘then’ denotes temporal sequence. Unlike IMPREC constructions, GENPREC constructions are marked by the negator *mau²¹* (23).

(23) 还 没 出 窝 就 拿 哒 (得) 场 上 去 卖
xai¹³ mau²¹ tɛ^hy²⁴o³³ tɛiəu²¹ la¹³ ta²¹ (tɣ²⁴) tsan¹³ san²¹k^hɣ⁴⁵ mai⁴⁵.
 yet not to.grow.up then to.take LOC LOC market to.go to.sell
 ‘The (pigeons) were taken to the market to sell before they were mature.’
 (Wu, 2005, p. 235)

In some languages, the event in an IMPREC clause may not be realized. One example is found in Ngan'gityemerri where the intentional marker -*ngini* is used (24).

(24) Ngan'gityemerri (Southern Daly)

ngani-fili-ngini-tye, epe wetimbi yemenggeng-ngindi.
 1SG.go.SBJ.IRR-wander-INTENT-PST but fine 2SG.arrive.SBJ.PFV-1SG.IO
 ‘I was about to wander off, but fortunately you just turned up.’ (Reid, 1990, p. 174)

In (24), the intentional enclitic -*ngini* expresses the “subject's resolve to carry out that event, was good leading up to the moment of execution, but was thwarted at the last moment by some external imposition” (Reid, 1990, p. 173). When an irrealis auxiliary like *ngani-* and the past tense -*tye* are used together, they indicate that an event like -*fili* ‘wander’ was not realized. The failed execution of ‘wander off’ is also indicated by *epe* ‘but’. Note that the intentional enclitic -*ngini* is related to its nominal usage as a purposive case (Reid, 1990, p. 325). On the other hand, GENPREC constructions do not seem to contain any item denoting ‘before’ (Reid, 1990, p. 345). The intentional enclitic -*ngini* is not found here (25).

- (25) *kuru gana-nin-garri-pat-nime-merrendi warrmadi-pe.*
 rain 3SG.feet.SBJ.IRR-1PL.INCL.DO-leg-catch-PL.DO-WARN quick-FUT
ngumbu-wurrki-dudu
 1PL.INCL.slash.SBJ.IRR-3DU.DO-cut.REDUP
 ‘Before the wet season catches up with us, we’ll have to circumcise those two (boys) quickly.’ (Reid, 1990, p. 345)

5.4 Verbs

Section 5.3 has shown that a verb meaning ‘want’ can express IMPREC. This section turns to other verbs that also express IMPREC. In Rapa Nui, an IMPREC construction is introduced by *oho* ‘go’ and a complementizer *mo* ‘for’ (26). By contrast, GENPREC constructions are marked by *mai* ‘from, before’ which often co-occurs with the constituent negator *ta'e* (27).

- (26) Rapa Nui (Austronesian)
I oho era a Kekoa mo rere mai... he 'aka he hoki a tu'a.
 PFV go DIST PROP Kekoa for jump hither NTR hesitate NTR return by back
 ‘When Kekoa was about to jump...he hesitated and returned back.’
 (Kieviet, 2017, p. 523)

- (27) *¡Ka hōrou mai, mai ta'e taji te oe!*
 IMP hurry hither from CONNEG cry ART bell
 ‘Hurry up, before the bell strikes!’ (Kieviet, 2017, p. 555)

In Mungbam (28), an IMPREC clause consists of *tê* ‘come’ which introduces a clausal complement with irrealis verb(s) such as *nā* ‘go.IRR’ and *tí* ‘meet.IRR’.⁵ As discussed in Section 5.6 below, an irrealis item can express IMPREC, and therefore irrealis verbs *nā* and *tí* may contribute to the IMPREC meaning. The clause-break marker *è* separates two clauses. By contrast, GENPREC constructions are marked by *bɔ̃hsə* ‘before’ but not *tê* ‘come’ (Lovegren, 2013, p. 268).

- (28) Mungbam (Atlantic-Congo)
mù tē ù nā tí è, kākṵē mù
 then.CL1 (B)come.IPFV CL1.TOP (A)go.IRR (C)meet.IRR CLSBRK CL1.frog then.CL1
nà mà lè sà m̄fwàha ù-kjī wā kākṵē.
 (A)go (A)take (A)VENT (A)descend CL1.soup CL1-ASSOC CL1.DET CL1.frog
 ‘(When) he was about to meet (him), Frog went and took down his, Frog’s, (real) soup...’
 (Lovegren, 2013, p. 385)

An IMPREC construction can also be introduced by a semantically-empty verb with a general meaning ‘do’. In Abawiri, an IMPREC clause consists of a light verb *ber* ‘do’ (29).

⁵ *ɯ* is a “front vowel which is at the same or a slightly lower height than *e*, but sounds more flat” (Lovegren 2013: 31).

(29) Abawiri (Lakes Plain)

d̥yi bwàbwei ogweyi sijer-e fro-rē ber-i-ri bo, / bo
 person then edge chase-NFIN go-IRR1 do-INCMP-NFUT TOP COORD
bwàbwei dede gi brèi-ri #/.
 then Dede FOC call-NFUT

‘When people were about to go to chase (game animals out of) the gully, they used to call Dede.’ (Yoder, 2020, p. 354)

In (29), the serial verb construction *sijere frorē beriri* consists of three verbs. The first two verbs *sijere* ‘chase’ and *frorē* ‘go’ denote a motion (Yoder, 2020, p. 354). *Frōrē beriri* is a prospective serial verb construction introduced by the irrealis *-rē* and the light verb *ber* ‘do’ (Yoder, 2020, p. 343). This construction can denote “an event that will occur soon after the temporal anchor point of the clause” (Yoder, 2020, p. 343). In this case, ‘go to chase’ occurred soon after ‘calling Dede’ which is the temporal anchor point. In Abawiri, a prospective serial verb construction is used in a past or present context (Yoder, 2020, p. 343). This serial verb construction is not found in a GENPREC construction (Yoder, 2020, p. 536). Similar to Abawiri, IMPREC constructions in Shǐxīng are marked by the reduplicated form ^L*tci*-^H*tci* ‘do-do’ (Chirkova, 2009, p. 81). The reduplication of ^L*tci* ‘do’ may intensify the immediacy meaning between two events, but this is not discussed in Chirkova (2009).

Interestingly, another verb that can express IMPREC is *nall’arr* ‘hit’ in Central Alaskan Yupik (30).

(30) Central Alaskan Yupik (Eskimo-Aleut)

Aya-llerka-qa_p nall’arr-luku iter-tuq.
 go-NMLZ.FUT-ABS.1SG.SG hit-APP.3SG enter-IND.3SG

‘At the time of my being about to leave, he came in.’

(Miyaoaka, 2012, p. 603)

In (30), the IMPREC clause literally means ‘(he) hitting my future leaving’ (Miyaoaka, 2012, p. 603). The future nominalizer *-llerka* (or *-ucirka*) denotes a past event of ‘was about to leave’. Using a future tense marker to denote past events is also found in other languages (Section 5.5). On the other hand, GENPREC constructions are indicated by *-vaileg* ‘before’ but not *nall’arr* ‘hit’ (31).

(31) *Angute-ts maqi-llru-ut, ner-vaileg-meng.*

man-ABS.PL bathe-PST-IND.3PL eat-CNNBF-3R.PL

‘The men took a bath before they ate.’ (Miyaoaka, 2012, p. 1395)

5.5 Future tense marker

Future tense markers commonly express IMPREC. They can even refer to non-future events in IMPREC constructions. They are commonly used with another item(s) that contributes to the IMPREC meaning. For example, in Kwaza, a future tense marker like *-nã* can co-occur with *-wy* ‘time’ to express IMPREC (32).

(32) Kwaza (Isolate)

kehỹ=bwa-'nã-tsy-wy dyte'na-da-ki.

burn.up=end-FUT-GER-time extinguish-1S-DECL

'I extinguished the fire when the house was about to burn away.'

(van der Voort, 2004, p. 651)

In (32), *-wy* 'time' turns a verb phrase into a temporal adverbial clause such as an IMPREC clause (van der Voort, 2004, pp. 508; 651). The future tense *-nã* is used even though 'was about to burn away' is a past event. That is, 'burn away' is a prospective event that would have happened had the fire not been extinguished. Although *-nã* can also express 'want' as in 'want to drink', 'want' is not compatible with 'burn away' because the subject 'house' is not volitional. Turning to GENPREC constructions, they contain an empty adverbial root *a-* and *-wy* 'time'. The monitory (i.e. prohibitive) *-tsi* (van der Voort, 2004, p. 324) or the negator *-he* (33) is always found in this GENPREC clause but not in IMPREC clauses.

(33) *a-'wy ja-xa-he-wy kui-tõi-'ra.*

ø-time eat-2-NEG-time drink-CL:eye-IMP

'Take the medicine before you eat!' (van der Voort, 2004, p. 509)

In Wolaytta, a figure clause consists of a future relativizer *-aná*, *sint'* 'face', a masculine singular oblique *-áa* and *-ni'* in '(34).

(34) Wolaytta (Afro-Asiatic)

harg-ée wor-aná sint-áa-ni cooshsh-iis.

sick-NOM.M.SG kill-REL.FUT face-OBL.M.SG-in make.vomit-PFV.3M.SG

'Right before the illness killed (the patient), it made (him) spit (blood).'

(Wakasa, 2008, pp. 882–883; translation slightly changed)

The future relative *-aná* can denote a future event but it can also denote the past prospective event 'the illness killed the patient'. *Sint'* 'face' can express IMPREC probably because of their semantic relation: 'face' can be grammaticalized into 'front' which can be further grammaticalized into 'before' which is semantically close to IMPREC. For example, in Baka, *lâlâ* 'eye, face' is grammaticalized into 'in front of'. In Korean, *cen* 'front' is grammaticalized into the temporal postposition *-ceney* 'before' (Heine & Kuteva, 2019, pp. 166–184; Haspelmath, 1997). The oblique *-áa* indicates that *sint'* 'face' modifies another noun, i.e. *harg* 'sickness' (Wakasa, 2008, p. 170). The IMPREC clause may literally mean 'in the face of the illness killing the patient'. GENPREC constructions are marked similarly to, but slightly different from IMPREC constructions. Both constructions contain an oblique marker like *-aa* and the postposition *-ni* 'in, at, by', but GENPREC clauses contain *gákk* 'reach' and the negative infinitive *-enn* (35) which are not found in IMPREC clauses.

- (35) *néeni gákk-enn-aa-ni tááni Kúrs-iyá*
 you reach-NEG.INF-OBL.M.SG-in I breakfast-ABS.M.SG
m-árg-ikke.
 eat-completely-NEG.IPFV.1SG
 ‘I will never eat breakfast before you reach.’ (Wakasa, 2008, p. 940)

5.6 *Irrealis marker*

IMPREC can be expressed with an irrealis marker that denotes a non-realized event.⁶ Although an irrealis item is commonly used with another item to mark IMPREC constructions, it is clear that in Ute the IMPREC meaning is largely contributed by the irrealis *-vaa* (36).

- (36) Ute (Uto-Aztecan)
ta'wachi 'uway yuga-vaa-kw, mamachi 'u págha-kwa-mi.
 man.GEN the.GEN enter-IRR-SUB woman.SBJ the.SBJ go-go-HAB
 ‘When(ever) the man is about to come in, the woman (always) takes off.’
 (Givón, 2011, p. 360; translation slightly changed)⁷

In (36), the subordinator *-kw* indicates a temporal clause. The temporal meaning can be specified: with the irrealis *-vaa* that indicates imminence or futurity, example (36) is an IMPREC construction. When the irrealis *-vaa* is dropped, the construction expresses an ‘after’ relation, i.e. ‘when(ever) the man comes in, the woman (always) takes off’ (Givón, 2011, p. 360). *-vaa* may have been labelled as “irrealis” because it is used in a wide range of constructions that are traditionally considered irrealis, e.g. future events and commands (Givón, 2011, pp. 134–140). The verbal suffix *-kwa* ‘go’ can indicate inception, sudden onset or imminence, i.e. the inception of *págha* ‘go’ is ‘take off’. This is semantically in line with the irrealis *-vaa* because the two events form a close temporal sequence, i.e. ‘take off right before entering’. *-kwa* ‘go’ can also indicate a habitual sense which is semantically in line with the habitual *-mi*. Note that *-mi* can be replaced by the immediate aspect marker *-y* (Givón, 2011, p. 360). GENPREC constructions are not found in the grammatical description of Ute (Givón, 2011). In Mapuche, an IMPREC clause is marked by *ñall* ‘just’ and the non-realized marker *-a* which can also indicate a plan or intention to be realized, or a prospect of realizing an event (Smeets, 2008, p. 220), similar to items meaning ‘want’ that can also express IMPREC (Section 5.3).

5.7 *Mirative marker*

One rare strategy is to use a mirative marker to express the immediacy meaning in IMPREC. A mirative marker encodes a speaker’s surprise (DeLancey, 1997). In Daai Chin, an IMPREC construction consists of *=üngta* ‘when’ and the mirative *-in* (37).

⁶ In a broad sense, imminent markers (§5.2) and future tense markers (§5.5) are also irrealis. They are discussed in separate sections in order to capture the typological diversity of IMPREC constructions. Irrealis markers examined in Section 5.6 are those that serve a wide range of irrealis functions like marking habits, future events and commands.

⁷ In the original text (Givón, 2011, p. 360), *págha-kwa-mi* is glossed as “go-go-REM-HAB”. Nonetheless, a remote past marker (REM) *-puga* is not found, therefore *págha-kwa-mi* is glossed as “go-go-HAB” in (36).

(37) Daai Chin (Sino-Tibetan)

I:m=a ah-nih pha lo hnüh=üingta ui:=noh vok
 house=LOC SBJ.AGR:3DU/PL arrive DIR:come finally=SUB:when dog=ERG pig
sun ah suui-msaaü-in.
 DEM SBJ.AGR:3SG bite-MIR

‘When they were about to arrive at home, the dog suddenly bit the pig.’

(So-Hartmann, 2009, p. 337)

In (37), =*üingta* is a general temporal subordinator with an underspecified temporal meaning (So-Hartmann, 2009, pp. 336—337). When the mirative *-in* is used in a figure clause, the temporal relation is specified to be IMPREC. Mirative seems to express ‘suddenly’ in (37), hence contributing to the IMPREC meaning. Turning to GENPREC constructions, they are marked by *hlaan* ‘before’ (38).

(38) *Kkhi:n ah pha lo hlaan=a buh kah-nih*
 guest SBJ.AGR:3SG arrive DIR:come SUB:before=CF rice SBJ.AGR:1DU/PL.EXCL
ei=kti=e.
 eat=NFUT=PL

‘Before the guests arrived we ate rice.’ (So-Hartmann, 2009, p. 336)

5.8 Purposive marker

A purposive marker can express IMPREC, given that it is semantically close to an intention (Section 5.3). In Yauyos Quechua, the purposive *-paq* ‘in order to’ marks an IMPREC construction (39).

(39) Yauyos Quechua (Quechuan)

mancha-ku-nchik runa wañu-y-paq ka-pti-n.
 scare-REFL-1PL person die-INF-PURP be-SUBDS-3

‘We get scared when people are about to die.’ (Shimelman, 2017, p. 295)

In (39), the infinitive *-y* nominalizes *wañu* ‘die’ which is the object of *ka-* ‘be’ (Shimelman, 2017, pp. 108—109). Although *wañu* ‘die’ is marked by the purposive case *-paq* ‘in order to’, ‘die’ is unlikely to be the purpose. Rather, the purposive *-paq* is likely to express IMPREC. Note that the subordinator *-pti* is used when two clauses have different subjects, i.e. ‘we’ and ‘people’ (Shimelman, 2017, p. 305). GENPREC constructions are not reported in the grammatical description of Yauyos Quechua (Shimelman, 2017, p. 295).

Another purposive marker that can express IMPREC is the infinitive *mà-* in Sri Lanka Malay (40) that can express a purpose like *mà-hiidop thumpath* (INF-stay place) ‘place to stay’ (Nordhoff, 2009, p. 520).

(40) Sri Lanka Malay (Austronesian)

derang anà-kuthumung pada=nang asà-thaakuth, ruuma=nang mà-laari

3PL PST-see PL=DAT CP-fear house=DAT INF-run

kapang-pii, derang=nang byaasa svaara hatthu su-dinngar.

when-run 3PL=DAT habit sound INDF PST-hear

‘They only got afraid at what they saw, and when they were about to run back home, they heard a familiar voice.’ (Nordhoff, 2009, p. 782)

A GENPREC construction can consist of a verb marked by the infinitive *mà-* (41), similar to the IMPREC construction (40). Different from IMPREC constructions, the verb in the GENPREC clause is marked by the dative *=nang*. Moreover, the GENPREC construction is marked by (*kà*)*thaama* ‘before’ (Nordhoff, 2009, p. 626) or *duppang* ‘before’ (41).

(41) *Itthule see=yang mà-kiiring=nang duppang incayang see=yang hathu Buruan*

but 1SG=ACC INF-send=DAT before 3SG.POLITE 1SG=ACC INDF bear

mà-jaadi su-bale-king.

INF-become PST-turn-CAUS

‘But before he sent me back, he turned me into a bear.’

(Nordhoff, 2009, p. 626)

A dative marker can denote a purpose, in turn expressing IMPREC. One example is the dative *-ma* in Innamincka (42).

(42) Innamincka (Pama-Nyungan)

Yini yada thawa-ni, nganyi thaw-ini-ma ngana-rla.

2SG:NOM hither go-IPST 1SG:NOM go-GER-DAT do-PRS

‘You came when I was just about to go.’

(Breen, 2004, p. 133; morpheme boundary drawn by me)

In Innamincka, a dative suffix like *-ma* can denote destination, purpose, possession, beneficiary or reason (Breen, 2004, p. 79). The purposive meaning may in turn express IMPREC (42). A dative marker often follows the gerund form *-ini-* (Breen, 2004, p. 79). *Ngana* ‘to do’ in the present tense form can express ‘X is about to Y’ when the lexical verb is marked by a future tense suffix (Breen, 2004, p. 132). In (42), although a future tense marker is not used, this ‘about to’ meaning is present. Turning to GENPREC, it is not clear which marker expresses the GENPREC meaning (43). One possible candidate is the negator *walya* which can optionally be found in a GENPREC clause, but it is not found in an IMPREC clause.

(43) *Panma-na ngani, walya pani-pani-ka mangg-ini-nguda.*

put.out-IPST 1PL:EXCL:NOM not nothing-nothing-CAUS burn-GER-ABL

‘We put (the fire) out before it did much damage.’

(Breen, 2004, p. 147; morpheme boundary drawn by me)

ing’ (Zemp, 2018, pp. 810–811). Similar to an IMPREC construction (46), a GENPREC construction contains the negator *ma*, but it also contains a (de)limitative *-tsa* and conditional *-na* (47) (Zemp, 2018, pp. 797; 793). The (de)limitative *-tsa* can express ‘about a certain amount’ or ‘only’ (Zemp, 2018, p. 365).

- (47) *sna-a k^ho-s ŋatʃa-na ma t^huk-tsa-na k^ho-s*
 early-DAT s/he-ERG we.PL.EXCL-COM NEG meet-LIM-COND s/he-ERG
k^ho-raŋ-a maŋmoo joŋ-ma-t-k^han tsoŋs-la taŋ-et-suk.
 s/he-self-DAT a.lot\EMPH come-INF-FCT-NMLZ same-DAT give-CRT-IFR
 ‘Earlier, he—before he met us—, he talked like one who thought that he knew (the language) well.’ (Zemp, 2018, p. 793)

5.10 Locational marker

A locational marker is another way to express IMPREC. The spatial locational meaning is metaphorically used to denote a temporal location. One example is the locative *-k^ho* in Duhumbi (48).

- (48) Duhumbi (Sino-Tibetan)
woj p^het-rinpra-k^ho gar t^heŋ-dzu-t^hja=olo?
 3SG arrive-about-LOC 1PL be.ready-stay-POT.NPST=then
 ‘When he is about to arrive, then we would probably be ready.’
 (Bodt, 2020, p. 609)

In Duhumbi (48), an IMPREC clause is marked by *-rinpra* ‘about to’ followed by a locative *-k^ho* which is only found to refer to a future event (Bodt, 2020, p. 609). On the other hand, GENPREC is expressed with *go* ‘before’ (Bodt, 2020, p. 309). Another locational marker that can mark IMPREC is *-u!lee* ‘inside, within’ in Tamil (49).

- (49) Tamil (Dravidian)
kumaar uṭkaar-kir-atu-kk-u!lee avarka! taŋ naarkaali-y-ai eṭu-tt-aarkal.
 Kumar sit-PRS-NMLZ-DAT-within they he.OBL chair-ACC take-PST-3PL
 ‘Just before Kumar was about to sit down, they took away his chair.’
 (Lehmann, 1993, p. 306; translation slightly changed)

In an IMPREC clause in Tamil (49), a verb phrase is nominalized by *-atu*, marked by a dative suffix like *-kk(u)*. A present tense *-kir* is required even though (49) is about two past events, ‘was about to sit down’ and ‘took away his chair’. The postposition *-u!lee* ‘inside, within’ denotes a minimal time gap between two events (Lehmann, 1993, p. 306). GENPREC constructions are encoded in a very similar way, consisting of the present tense suffix *-kir*, nominalizer *-atu* and a dative like *-kku*. However, *munnaal* ‘before’ is used rather than *-u!lee* ‘inside, within’ (50).

- (50) *kumaar kaṭai-kku-p poo-kir-atu-kku munṇaal taṅ naṅpaṅ-ai-p*
 Kumar shop-DAT go-PRS-NMLZ-DAT before he.OBL friend-ACC
paar-tt-aan/ paar-pp-aan.
 see-PST-3SG.M see-FUT-3SG.M
 ‘Before Kumar went/goes to the shop, he saw/will see his friend.’
 (Lehmann, 1993, p. 306)

The other two locational markers attested are the distal demonstrative *t* in Russian (51) and *buda* ‘front’ in Movima (52).

- (51) Russian (Indo-European)

On-a za-žg-l-a sveč-i, pered t-em kak
 3SG-F.NOM PFV-light-PST-F candle-PL.ACC right.before DEM.DIST-N.INS as
gost-i se-l-i za stol.
 guest-PL.NOM sit.down.PFV-PST-PL behind table[ACC]
 ‘She lit the candles just before the guest sat down to table’
 (Wade, 2011, p. 500; transliterated and glossed by Bernard Comrie)

- (52) Movima (Isolate)

la’ jaymot-kay n-os la’ bu<ra~>da=os piyesta
 ANT call-BINV OBL-ART.N.PST ANT front<INAL~>=ART.N.PST fiesta
 ‘(He) called me just before the last fiesta.’ (Haude, 2006, p. 513)

In Russian (51), an IMPREC clause is introduced by *pered* ‘right before’, the distal demonstrative *t*, neuter instrumental *-em* and *kak* ‘as’ (Wade, 2011, pp. 499—500). A negative item *ne* is not found in IMPREC clauses but it is always found in GENPREC clauses marked by *poka* ‘before, as long as, until’ (Wälchli, 2018). In Movima (52), *buda* ‘front’ can express IMPREC or the spatial sense of ‘in front of’ (Haude, 2006, p. 563). ‘Before’ in the temporal sequence sense is commonly grammaticalized from ‘before, front’ in the spatial sense in different languages (Heine & Kuteva, 2019, p. 184). It is uncertain which item in (52) contributes to the immediacy meaning in IMPREC. It could be understood based on the discourse context. Note that the anterior marker *la’* expresses ‘last’ as in ‘last fiesta’ rather than ‘before’ in the temporal-sequence sense. No GENPREC constructions are found in the grammatical description of Movima (Haude, 2006).

5.11 Asyndetic construction

The last strategy is an asyndetic construction, i.e. it does not have an item contributing to the IMPREC meaning. This strategy is found in Limbu (53).

- (53) Limbu (Sino-Tibetan)

keṅ-aṅ sur-aṅ-be-n a-ndzum-ille tems-aṅ
 trip.and.fall-1SG.PS.PT finish-1SG.PS.PT-NMLZ-ABS my-friend-ERG catch-1SG.PS.PT
 ‘My friend caught me just before I finished falling to the ground. (i.e. just as I was about to hit the ground)’ (van Driem, 1987, p. 119)

In (53), it is unclear which item expresses IMPREC. Note that *-an* denotes preterit (or past) events like ‘caught’ and ‘hit’ (van Driem, 1987, p. 97). By contrast, a GENPREC construction is marked by *pəile* ‘first’, so it is not asyndetic (54).

- (54) *him-ʔo· pe-k-maʔ-nulle pəile· sya iŋ-m· bo-ŋ.*
 house-LOC go-INF-than first rice buy-INF must
 ‘(We’ll) have to buy rice before we go home.’ (van Driem, 1987, p. 53)

6 General properties of immediate precedence constructions

After exploring the strategies of marking immediate precedence (IMPREC) constructions, this section discusses the general properties of this construction observed in Section 4 and Section 5. We will first discuss negation used in IMPREC clauses and GENPREC clauses, answering our second research question (Section 6.1). Subsequently, we will discuss other properties including clausal orders and temporal domains involved in IMPREC constructions (Section 6.2). Finally, we will give brief remarks on other observations that deserve future examination, including downgrading and blocking of irrealis marking (Section 6.3).

6.1 Negation in immediate precedence and general precedence constructions

This section compares immediate precedence (IMPREC) and general precedence (GENPREC) constructions regarding patterns of negation. In IMPREC clauses and GENPREC clauses, a negator may (i) always be found, (ii) occasionally found or (iii) not be found. Olguín Martínez (2023) argues that the existence of a negator in GENPREC clauses is affected by the functionality of GENPREC markers. GENPREC markers that can serve other temporal relations like ‘until’ tend to co-occur with a negator. Optional negators are only found with monofunctional GENPREC markers, i.e. those that do not serve other temporal relations. Nonetheless, these monofunctional GENPREC markers do not usually co-occur with a negator.

In general, a negator is more commonly found in GENPREC clauses than in IMPREC clauses. In just two languages, an IMPREC clause is always found to contain a negator (2/50 languages=4%). In Balantak, an IMPREC construction consists of *sian-po* (NEG-IPFV) ‘before’ and *liu-liu* ‘immediately’ (13). Another language is Purik Tibetan where a negator *ma* is always found in IMPREC construction, i.e. ‘just before dawn’ is understood as ‘when the light has not entered’ (46). Strategies to express IMPREC in both languages are monofunctional.

By contrast, a negator is always found in GENPREC clauses in 16 languages examined here (16/33 languages=48%) (Table D1 in Appendix D).⁸ Notably, in both Balantak and Purik Tibetan a negator is always found in both GENPREC clauses and IMPREC clauses (Section 4; Section 5.9). That is, they form an implicational relation that “in a given language, if IMPREC clauses always contain a negator, GENPREC clauses also always contain a negator”. This can be partially explained by the fact that an IMPREC construction in Balantak is derived from GENPREC constructions (Section 4). However, it cannot explain why this phenomenon is found in Purik Tibetan because IMPREC and GENPREC are encoded differently (Section 5.9).

In only one language, IMPREC clauses contain an optional negator. In Coastal Marind, the frustrative marker *-um* ‘in vain’ can be used in IMPREC clauses (55).

⁸ In our 50-language sample, GENPREC constructions are only found in 33 languages.

(55) Coastal Marind (Trans-New Guinea)

oso m-ak-um-e-hok epe, ye te-nd-a-yanid-a-m.
 start OBJO-1.A-FRUS-1PL-lie.down.PL DIST:III rain GIV:III-LOC-3SG.A-push-EXT-VEN
 ‘We were just about to sleep, that’s when the rain started.’
 (Olsson, 2021, p. 490)

In (55), the action of *hok* ‘sleep’ failed because it was pre-empted by *ye* ‘rain’, and therefore the frustrative prefix *um-* ‘in vain’ is used (Olsson, 2021, p. 490). Since this frustrative marker denotes a failed action, it has a negative meaning that something did not happen, hence treated as a negator here. By contrast, in (44) the frustrative marker *-um* is not used because ‘getting dark’ is not pre-empted by ‘crossing’. The *oso m-* construction in Coastal Marind is polyfunctional. While it can express IMPREC, it can also express anteriority ‘as soon as’, i.e. ‘as soon as it got dark, we crossed’. This may be another difference between IMPREC and GENPREC. In GENPREC clauses, an optional negator is only found with monofunctional GENPREC markers (Olguín Martínez, 2023). By contrast, an optional negator is only found with polyfunctional IMPREC markers, although only one language is attested with this pattern.

Turning to GENPREC constructions, four languages are found where GENPREC clauses may or may not contain a negator (4/33=12%), including Ma’di, Innamincka,⁹ Cantonese and Rapa Nui. Both *tʃā* ‘reach’ in Ma’di (Blackings & Fabb, 2003, pp. 432–433) and (之)前 (*zhi*)*cin4* ‘before’ in Cantonese (Matthews & Yip, 2011, pp. 344) express GENPREC without serving other temporal relations like ‘while’, ‘after’, etc. This is in line with Olguín Martínez’s (2023) observation that optional negators are only found with monofunctional GENPREC markers. In Rapa Nui, GENPREC constructions are marked by *mai* which is arguably polyfunctional for expressing not only ‘before’ but also ‘while’ (Kieviet, 2017, pp. 555–556). The constituent negator *ta’e* can be optionally used. Compare (27) with (56)—the former example contains the negator *ta’e* whereas the latter does not.

(56) Rapa Nui (Austronesian)

He tunu atu au i to tāua kai mai pō.
 NTR cook away 1SG ACC ART:of 1DU.INCL food from night
 ‘I will cook our food, before it gets dark.’
 (Kieviet, 2017, p. 555)

Since *mai* ‘before’ can also express ‘while’, it seems to be an exception to Olguín Martínez (2023) generalization that optional negators are only found in monofunctional GENPREC clauses. Nonetheless, the ‘while’ sense is only present when it is used with the continuous *'ana* (57).

⁹ Although a negator is optionally used in GENPREC clauses in Innamincka, it is not examined further here because GENPREC constructions are not marked by any item denoting ‘before’. Olguín Martínez’s (2023) argument is concerned with mono-/polyfunctionality of a clause-linking device. Without a clause-linking device, the discussion of GENPREC in Innamincka is not relevant here.

- (57) 'O ira ka hā'ere 'i roto i te mā'eha, mai ai atu
 because.of ANA IMP walk:PL at inside at ART light from exist away
 'ana te mōrī.
 CONT ART light
 'Therefore walk in the light, while there is still light.' (Kieviet, 2017, p. 556)

In short, although *mai* 'before, while' is polyfunctional, the GENPREC clause that it marks is monofunctional because 'while' is marked by not only *mai* but also the continuous 'ana.

IMPREC clauses in most languages examined here do not contain a negator. Olguín Martínez (2023) argues that in a GENPREC clause, a negator tends not to co-occur with a monofunctional GENPREC marker (not serving other temporal relations like 'after' or 'until'). This theory may be applicable to GENPREC constructions because they are commonly marked by a single GENPREC item that can be considered a "clause-linking device" (Table D1 in Appendix D). However, this theory is harder to apply to IMPREC constructions because they are commonly expressed paraphrastically where there is no single clause-linking item that denotes IMPREC (Table B1 in Appendix B). These paraphrastic constructions are most commonly monofunctional. Besides Coastal Marind (44), Sri Lanka Malay is another language where the strategy to express IMPREC can also express another temporal relation. That is, the infinitive *mà* and an item meaning 'when' (i.e. *kapang*, *kam*, *kala* and *ka*) can not only mark IMPREC (40), but also 'when' (58).

- (58) Sri Lanka Malay (Austronesian)

Mana=na mà-thiidor kam-pii, se maakan=nang kam-pii.
 which=DAT INF-sleep when-go 1SG eat=DAT when-eat
 'When I go to bed, when I eat (I think of my wife).'
 (Nordhoff, 2009, p. 283)

In (58), 'when I go to bed' contains both the infinitive *mà-* and *kam-* 'when', similar to an IMPREC clause (40). Nordhoff (2009, p. 283) suggests that (58) expresses a temporal coincidence 'when' where 'go to bed' and 'think of my wife' occur simultaneously. Although *mà kapang/kam* can express IMPREC (40) or 'when' (58), a negator is not found to specify the IMPREC function.

IMPREC can be expressed by a single item which expresses 'be about to', 'almost', 'right before', etc. (Table B1 in Appendix B). Interestingly, none of these items express other temporal relations. Since these items are monofunctional, a negator is not needed to specify that the clause serves an IMPREC function. This is similar to Olguín Martínez's (2023) claim that a negator is not commonly used with monofunctional GENPREC markers.

Besides mono-/polyfunctionality, another explanation for the absence of a negator in IMPREC clauses is that some IMPREC clauses denote an event which is pragmatically assumed to be unrealized, e.g. 'almost...but did not', and therefore a negator is not needed. In some languages, a negator is not used even though the event in an IMPREC clause is not realized. For example, (24) in Ngan'gityemerri expresses 'I was about to wander off, but fortunately you just turned up'. 'Wander off' was not realized because 'you turned up'. Similarly, (32) in Kwaza expresses 'I extinguished the fire when the house was about to burn away', implying that the house did not burn away.

In this section, we have shown that a negator is rarely found in IMPREC clauses, compared to GENPREC clauses. This phenomenon is another piece of evidence that IMPREC and GENPREC should be treated as two distinct temporal relations. We have also argued that the rarity of negators in IMPREC clauses can be explained by the monofunctionality of IMPREC markers, and by how IMPREC clauses can denote an event which is pragmatically assumed to be unrealized. We will now proceed to other properties found in IMPREC constructions, including clausal orders, temporal domains (Section 6.2), downgrading and blocking of irrealis marking (Section 6.3).

6.2 *Clausal orders and temporal domains*

Regarding the clausal order within IMPREC constructions, IMPREC clauses predominantly precede figure clauses across languages, i.e. 43 over 50 languages (86%) employ an “IMPREC clause—figure clause” order only. By contrast, only four languages (8%) have the “figure clause—IMPREC clause” order only. Finally, three languages (6%) have both clausal orders attested (Table B1 in Appendix B). This finding is interesting because the iconicity of event order is often argued to be a contributing factor of clausal order in temporal sequence. That is, if event X happens before event Y, this temporal sequence would be expressed in the order of “event X, event Y” because the event order is iconically reflected by the syntactic order (Tai, 1983; Croft, 2022). This iconicity is not salient in IMPREC constructions because the non-iconic order “IMPREC clause—figure clause” is more common. A similar pattern is also found in GENPREC constructions. In the language samples of Olguín Martínez (2023), 48 languages tend to have a “GENPREC clause—figure clause” order which does not iconically reflect the temporal order of events. By contrast, only 28 languages tend to use the iconic clausal order “figure clause—GENPREC clause”. Our data collected also supports this preference of clausal orders (Table D1 in Appendix D): 14 out of 33 languages (42%) employ the order “GENPREC clause—figure clause” only. By contrast, only 7 out of 33 languages (21%) employ the “figure clause—GENPREC clause” order only. Finally, both clausal orders are found in 12 out of 33 languages (36%). In summary, in both IMPREC and GENPREC constructions the non-iconic clausal orders are more common than the iconic clausal orders. Moreover, the non-iconic clausal order seems to be more common in IMPREC constructions than in GENPREC constructions. However, GENPREC constructions are well-studied, and therefore more examples of GENPREC constructions may be reported. In turn, a rarer pattern of “figure clause—GENPREC clause” is more likely to be reported in a grammatical description than the “figure clause—IMPREC clause” order.

In some languages, an IMPREC construction is only used to encode events in a specific temporal domain. In Xiang, the IMPREC clause can only refer to past actions (22) (Wu, 2005, p. 142). In Duhumbi, IMPREC constructions marked by *-rinpra-k^ho* (-about-LOC) are only found to refer to future events (48) (Bodt, 2020, p. 609). There is no known language that requires present events in an IMPREC construction.

6.3 *Other observations and future direction*

Two properties of IMPREC constructions, i.e. downgrading and irrealis marking, are observed but they are not examined further here because each property may be individually studied in the future.

Future studies can explore the degree of downgrading of IMPREC constructions, compared to adverbial constructions like ‘after’ and ‘if’ constructions. In some languages, IMPREC clauses have lost some clausal properties, i.e. they are downgraded (Hetterle, 2015, p. 147; Cristofaro, 2003, p. 168; Lehmann, 1988). One downgrading feature is that the

predicate in an IMPREC clause is marked by a nominalizer, e.g. *-atu* in Tamil (49). A predicate can also be marked by infinitive like *-y* in Yauyos Quechua (39) and *-pa* in Purik Tibetan (46). Another downgrading feature is that a tense value is required in IMPREC clauses (Hetterle, 2015, p. 170). If a tense marker is required in IMPREC clauses but not in an independent clause, these IMPREC clauses have lost properties of an independent clause, i.e. they are downgraded. In Japhug, a factual non-past clause functions as an IMPREC clause, even if the construction is about past events (1). A future tense marker is used in IMPREC clauses regarding past events, found in languages like Kwaza (32). Similarly, in Tamil, an IMPREC construction referring to past events consists of a present tense *-kir* in the IMPREC clause (49). It is not clear if these tense markers are required in IMPREC constructions.

It is observed that different temporal and logical constructions show different degrees of downgrading. Based on cross-linguistic patterns, Hetterle (2015, p. 176) constructed a downgrading hierarchy of adverbial clause types (Figure 1). Different temporal and logical relations are ranked based on their degree of downgrading across languages. The least strongly downgraded clause types are at the top whereas the most strongly downgraded clause types are at the bottom.

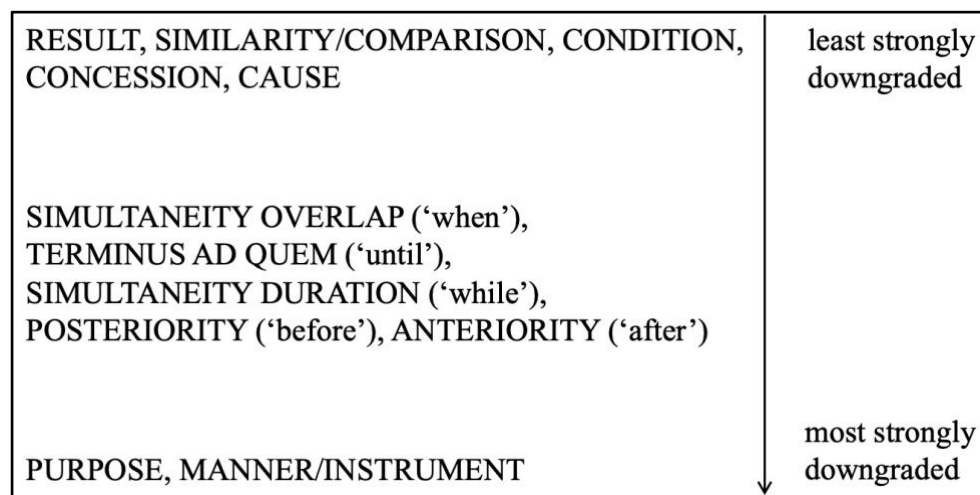


Figure 1. The Downgrading Hierarchy of Adverbial Clause Types (modified from Hetterle 2015, p. 176)

In Figure 1, although posteriority or GENPREC 'before' is included, IMPREC is not. One research question is how IMPREC would fit into this hierarchy. It requires a study that compares different downgrading strategies of IMPREC constructions with those of other temporal/logical constructions, then measures their degree of downgrading.

Future study can explore the usage of irrealis marking in IMPREC constructions, that is, whether a strong irrealis marker can block the usage of weak irrealis marker, and whether an irrealis marker is blocked by a specialized IMPREC marker. Weak irrealis markers only express potential situations, e.g. an event that may happen in the future. Strong irrealis markers only express counterfactual situations, e.g. a wish like *if I were a bird* (Olguín Martínez, 2025; von Prince et al., 2022, p. 226). In a language containing both weak and strong irrealis markers, it is argued that a strong irrealis marker is used in counterfactual conditional constructions where the weak irrealis marker cannot appear. For example, in Rukai, the weak irrealis *amo-* can denote future situations, habitual conditional relations, etc. In counterfactual conditional constructions, *amo-* is not used. Rather, the strong irrealis *ni-* is used (59).

(59) Rukai (Austronesian)

la-ni ki-sialalr-iae, ni-kekrakelrange-lra-ine ana
 if-3SG.GEN NEG-DYN.NFIN.hear-1SG.OBL CF-DYN.beat-1SG.NOM-3SG.OBL that
lalake-'o.
 child-2SG.GEN

‘If he had not listened to me, I would have beaten your child.’

(Zeitoun, 2007, p. 152; cited by Olguín Martínez [2025])

In some languages, a strong and/or weak irrealis marker can be blocked by a specialized counterfactual conditional marker. In counterfactual conditional constructions in Shiwilu, the strong irrealis *-wi* is not used. Its usage may be blocked by the existence of a specialized conjunction = *a'kasu*’ (60).

(60) Shiwilu (Cahuapanan)

kwa Shiwilu la'la' ñinchi-t=a'kasu' ñi-lli, a'-lek-dek-nanseku
 1SG Shiwilu language know-VM=CONJ exist-3SG CAUS-ask-3PL-COND.1SG>3SG
wila=wek=lusa'.
 child=1SG.POSS=PL

‘If I had known Shiwilu, I would have taught it to my children.’

(Olguín Martínez, 2025)

Two interesting questions are whether a strong irrealis marker blocks the usage of weak irrealis marker in IMPREC constructions, and whether a specialized IMPREC marker blocks the usage of any irrealis marker. This question is relevant because IMPREC constructions can contain or even be marked by future tense (Section 5.5) and irrealis markers (Section 5.6). Moreover, since some IMPREC clauses express a strong irrealis meaning such as ‘when the house was about to burn away (=it did not burn away because I extinguished the fire)’ (32), IMPREC clause may not allow weak irrealis marking. Answering these questions can deepen our understanding of differences between IMPREC and other temporal/logical functions.

A preliminary result is provided below. First, counterfactual (or strong irrealis) markers have not been found in IMPREC constructions. For example, an IMPREC construction in Kaluli is marked by a future tense (i.e. weak irrealis) marker like *-o:*, rather than the counterfactual marker *kibo:bowo:* (61) (Grosh & Grosh, 2004, p. 76).

(61) Kaluli (Trans-New Guinea)

Beyog-a: dub-a:nig-o:-ka: a:l-abiki, o:be-yo: a:na kegeo:.
 possum-ERG pull-IMM-1FUT-INTENS thus-SIM bird-TOP then gather/PST

‘When the possum was indeed about to begin pulling (the moon), the birds all gathered.’

(Grosh & Grosh, 2004, p. 36)

Regarding the second question, specialized IMPREC markers are not found to block the use of irrealis markers. In Yurakaré, IMPREC is marked by the specialized IMPREC marker *-nishi*. However, the habitual suffix *-jti* which expresses a weak irrealis meaning can be found in an IMPREC construction (62).

(62) Yurakaré (Yurakaré)

lējələ-nishi-ø ma-bali-jti-ø=w adyaj-ta dalla=w.
 day-NC-3 3PL-go.PL-HAB-3=PL fast-MID head=PL

‘Just before daybreak, they used to take the hair with them running.’

(van Gijn, 2006, p. 195)

Similarly, in Cavineña an IMPREC construction is marked by =*wie* ‘just before’. Nonetheless, =*wie* does not block the usage of the imperfective *-ya* which can express weak irrealis meanings like near future and habitual (63).

(63) Cavineña (Pano-Tacanan)

Kana-kicc=tu_{COPS} ju-ya ekwita_{COPS} maju=wie.
 breathing-WITH=3SG(-FM) be-IPFV person die=JUST.BEFORE

‘A man pants (lit. is with breathing) when he is about to die.’

(Guillaume, 2008, p. 721)

One can compare the use or non-use of irrealis marking in IMPREC constructions and that in GENPREC constructions. This can further deepen our understanding of differences between IMPREC and GENPREC.

7 Conclusion

Immediate precedence (IMPREC) constructions meaning ‘right before event X, event Y occurs’ have not been studied in detail in previous literature. To narrow this research gap, this study is the first to investigate how IMPREC is expressed by using a sample of 50 languages from 26 lineages (22 language families and 4 isolates). The results suggest that IMPREC and ‘before’ (general precedence or GENPREC) should be considered two distinct functions because many IMPREC constructions are not derived from GENPREC constructions. Some interesting strategies to express IMPREC include using augmentative and mirative markers, and a verb meaning ‘hit’. This study has also explored the use of negation in IMPREC clauses, compared to GENPREC clauses. The results suggest that a negator is not commonly found in IMPREC clauses, unlike GENPREC clauses. A negator is not needed because the strategies to express IMPREC are usually monofunctional (i.e. no need to disambiguate the IMPREC function from other temporal relations) and because IMPREC clauses can denote events that are pragmatically assumed to be unrealized, e.g. ‘right before I was eaten by that shark’.

This study has narrowed the research gap of IMPREC, a temporal relation that has not been considered a distinct temporal relation. Since IMPREC and GENPREC are expressed differently across languages, linguists should consider describing IMPREC in grammatical descriptions. Two properties of IMPREC constructions can be studied in-depth in future studies. First, one can compare the degree of downgrading of IMPREC constructions and that of other temporal/logical constructions. Second, one can examine the use or non-use of irrealis markers in IMPREC constructions.

Acknowledgements

This study is not complete without the help of and suggestions from the two anonymous reviewers, Stephen Matthews, Emma Keith, Bernard Comrie, Guillaume Jacques and Chan Kai Yuen.

Abbreviations

(A)	verb class a	IMP	imperative
(B)	verb class b	IMPREC	immediate precedence
(C)	verb class c	INAL	inalienable possession
+	morpheme boundary (portmanteau or unclear)	INCL	inclusive
1	first person	INCOMP	incompletive
2	second person	IND	indicative
3	third person	INDF	indefinite
3R	reflexive-third person in Central Alaskan Yupik	INF	infinitive
A	actor	INS	instrumental
ABL	ablative	INT	intensive
ABS	absolutive	INTENS	intensifier
ACAUS	anticausative	INTENT	intention(al)
ACC	accusative	INV	inverse
ADV	adverbial marker	IO	indirect object
AFF	affirmative	IPFV	imperfective
AGR	agreement	IPST	immediate past
ALL	allative	IRR	irrealis
AN	action nominal	IRR1	irrealis 1: purpose and counterfactual
ANA	general anaphor in Rapa Nui	LIM	(de)limitative
ANT	anterior(ity)	LNK	linker
AOR	aorist	LOC	locative
APP	appositional mood	M	masculine
ART	article	MID	middle voice
ASP	aspectual marker	MIR	mirative
ASSOC	associative	N	neuter
AUG	augmentative	NC	near completive
AUTO	autive	NEG	negator
BINV	bivalent inverse	NFIN	non-finite
CAUS	causative	NFUT	non-future
CC	copula complement in Cavineña	NMLZ	nominalizer

CF	counterfactual	NOM	nominative
CL	classifier	NPST	non-past
CL1	noun class 1	NTR	neutral aspect
CLSBRK	clause break	OBJ	object
CNNBF	precessive (before) connective mood in Central Alaskan Yupik	OBJO	object orientation
COM	comitative	OBL	oblique
COMP	complementizer	PATIENT	patient
CON	continuative	PFV	perfective
COND	conditional	PL	plural
CONJ	conjunction	POLITE	polite pronoun
CONNNEG	constituent negation	POSS	possessive
CONT	continuous	POT	potential
COORD	coordinating conjunction	PRES	present continuous
COPS	copula subject in Cavineña	PROP	proper article
CP	conjunctive participle	PROS	prospective
CRT	certainitive	PROX	proximal demonstrative
CS	contrasted subject	PROXM	proximative
CSM	change of state marker	PRS	present
D	deictic marker	PS	patient or subject in Limbu
DAT	dative	PSN	personal name
DECL	declarative	PST	past
DEF	definite (article)	PT	preterit
DEM	demonstrative	PURP	purposive
DEM3	demonstrative root 3	R	realis
DET	determiner	RECOG	recognitional pronoun
DIR	directional	REDUP	reduplication
DIST	distal	REFL	reflexive-middle-medio passive in Yauyos Quechua
DISTR	distribution	REL	relative
DO	direct object	REM	remote
DU	dual	S	speaker
DUR	durative	SBJ	subject
DYN	dynamic	SENS	sensory

EMPH	emphatic	SEP	separative
ERG	ergative	SEQ	sequential
EXCL	exclusive	SFP	sentence-final particle
EXT	extended	SG	singular
F	feminine	SIM	simultaneous
FACT	factual non-past in Japhug	SS	same-subject
FCT	factual	SUB	subordinator
FM	formative	SUBDS	subordinator different subjects
FOC	focus	TEMP	temporal
FRAME	constituent-framing particle	TOP	topic
FRUS	frustrative	TR	transitive
FUT	future	VEN	venitive
GEN	genitive	VENT	ventive
GER	gerund(ival)	VM	valency marker
GIV	given	WARN	warning
HAB	habitual		
IFR	inferential		
III	gender III		
IMM	immediate		
IMN	imminent		

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Appendix A

Table A1. 50 languages examined in this study, organized based on macro-areas and language families

Languages	Macro-areas	Families	Sources
Wolaytta	Africa	Afro-Asiatic	(Wakasa, 2008)
Ma'di	Africa	Central Sudanic	(Blackings & Fabb, 2003)
Mungbam	Africa	Atlantic-Congo	(Lovegren, 2013)
Bininj Gunwok	Australia	Gunwinyguan	(Evans, 2003)
Diyari	Australia	Pama-Nyungan	(Austin, 1978)
Djinba	Australia	Pama-Nyungan	(Waters, 1989)
Innamincka	Australia	Pama-Nyungan	(Breen, 2004)
Ngan'gityemerri	Australia	Southern Daly	(Reid, 1990)
Sri Lanka Malay	Eurasia	Austronesian	(Nordhoff, 2009)
English	Eurasia	Indo-European	COCA
Russian	Eurasia	Indo-European	(Wade, 2011; (Wälchli, 2018))
Modern Eastern Armenian	Eurasia	Indo-European	(Dum-Tragut, 2009)
Tamil	Eurasia	Dravidian	(Lehmann, 1993)
Tundra Nenets	Eurasia	Uralic	(Nikolaeva, 2014)

Japhug	Eurasia	Sino-Tibetan	(Jacques, 2021)
Cantonese	Eurasia	Sino-Tibetan	(Matthews & Yip, 2011; Lui, 2023)
Karbi	Eurasia	Sino-Tibetan	(Konnerth, 2014)
Limbu	Eurasia	Sino-Tibetan	(van Driem, 1987)
Purik Tibetan	Eurasia	Sino-Tibetan	(Zemp, 2018)
Qiang	Eurasia	Sino-Tibetan	(LaPolla & Huang, 2003)
Bjokapakha	Eurasia	Sino-Tibetan	(Grollmann, 2020)
Duhumbi	Eurasia	Sino-Tibetan	(Bodt, 2020)
Shìxīng	Eurasia	Sino-Tibetan	(Chirkova, 2009)
Daai Chin	Eurasia	Sino-Tibetan	(So-Hartmann, 2009)
Xiang dialects	Eurasia	Sino-Tibetan	(Wu, 2005)
Tshangla	Eurasia	Sino-Tibetan	(Andvik, 2010)
Ute	North America	Uto-Aztecan	(Givón, 2011)
Central Alaskan Yupik	North America	Eskimo-Aleut	(Miyaoka, 2012)
Balantak	Papunesia	Austronesian	(van den Berg & Busenitz, 2012)
Toqabaqita	Papunesia	Austronesian	(Lichtenberk, 2008)
Rapa Nui	Papunesia	Austronesian	(Kieviet, 2017)
Momu	Papunesia	Baibai-Fas	(Honeyman, 2016)
Savosavo	Papunesia	isolate	(Wegener, 2012)
Komnzo	Papunesia	Yam	(Döhler, 2018)
Abawiri	Papunesia	Lakes Plain	(Yoder, 2020)
Konai	Papunesia	Trans-New Guinea	(Årsjö, 2016)
Coastal Marind	Papunesia	Trans-New Guinea	(Olsson, 2021)
Urama	Papunesia	Trans-New Guinea	(Brown et al., 2016)
Bargam	Papunesia	Trans-New Guinea	(Hepner, 2006)

Duna	Papunesia	Trans-New Guinea	(San Roque, 2008)
Kaluli	Papunesia	Trans-New Guinea	(Grosh & Grosh, 2004))
Nukna	Papunesia	Trans-New Guinea	(Taylor, 2015)
Adang	Papunesia	Trans-New Guinea	(Haan, 2001)
Cavineña	South America	Pano-Tacanan	(Guillaume, 2008)
Paunaka	South America	Arawakan	(Terhart, 2024)
Yauyos Quechua	South America	Quechuan	(Shimelman, 2017)
Movima	South America	isolate	(Haude, 2006)
Yurakaré	South America	isolate	(van Gijn, 2006)
Kwaza	South America	isolate	(van der Voort, 2004)
Mapuche	South America	Araucanian	(Smeets, 2008)

Appendix B

Table B1 is a list of strategies of IMPREC construction found in 50 languages. The part of speech of each item and/or the construction of different strategies is discussed under “PoS/construction”. Position of IMPREC clauses is viewed relative to figure clauses. It can precede a figure clause or follow it. A strategy can be derived from a GENPREC construction or not. The strategies of GENPREC constructions are examined in Table D1 in Appendix D, but in some grammatical descriptions no GENPREC constructions are found. In those cases whether IMPREC constructions are derived from GENPREC constructions is unknown.

Table B1. strategies of IMPREC constructions in 50 languages

Language	Strategy	PoS/ construction	Position of IMPREC clauses	Derived from GENPREC construction	Source
Wolaytta	<i>-aná...</i> <i>sint-áa-ni</i>	<i>-aná</i> ‘future relative’; <i>sint</i> ‘face’; <i>-áa</i>	precede a figure clause	No	(Wakasa 2008, pp. 882—883)

		‘masculine singular oblique’; <i>-ni</i> ‘in’			
Ma’di	<i>ɬé</i>	‘almost, about to’	precede a figure clause	No	(Blackings & Fabb, 2003, p. 674)
Mungbam	<i>tê...tí</i>	<i>tê</i> ‘come’; an irrealis item like <i>tí</i> ‘meet.IRR’. They form a prospective construction with a prospective sense	precede a figure clause	No	(Lovegren 2013, pp. 384—385)
Bininj Gunwok	<i>wanjh...ninj</i>	<i>wanjh</i> ‘then’; <i>ninj</i> ‘irrealis’	precede a figure clause	Unknown	(Evans, 2003, p. 655)
Diyari	<i>ɲampu</i>	‘almost, about to’	precede a figure clause	No	(Austin, 1978, p. 492)
Djinba	<i>nyinuk...-mitj</i>	<i>nyinuk</i> ‘when’; potential <i>-mitj</i> ‘about to occur’	precede a figure clause	Unknown	(Waters, 1989, p. 386)
Innamincka	<i>-ma ngana</i>	dative like <i>ma-</i> ; <i>ngana</i> ‘do’	follow a figure clause	No	(Breen, 2004, p. 133)
Ngan’gityemerri	<i>-ngini/-ne...epe</i>	<i>-ngini/-ne</i> ‘just about to’ which is called an “intensive”; <i>-epe</i> ‘but’	precede a figure clause	No	(Reid, 1990, pp. 173—174)
Sri Lanka Malay	<i>mà...kapang</i>	infinitive <i>mà</i> which can denote purpose; an item meaning ‘when’, e.g. <i>kapang</i>	precede a figure clause	No	(Nordhoff, 2009, p. 782)
English	<i>shortly before</i>	shortly before	precede or follow a figure clause	Yes	personal knowledge; (COCA)
	<i>right before</i>	right before	precede or follow a figure clause	Yes	personal knowledge; (COCA)

	<i>just before</i>	just before	precede or follow a figure clause	Yes	personal knowledge; (COCA)
	<i>immediately before</i>	immediately before	precede or follow a figure clause	Yes	personal knowledge; (COCA)
Russian	<i>pered t-em kak</i>	<i>pered</i> ‘right before’; <i>t</i> ‘distal demonstrative’; <i>em</i> ‘neuter instrumental’; <i>kak</i> ‘as’	follow a figure clause	No	(Wade, 2011, p. 500; Bernard Comrie, p.c.)
Modern Eastern Armenian	<i>-u...lin-em</i>	future participle <i>-u</i> ; auxiliary <i>lin</i> ‘do, be’; future like <i>-em</i>	precede or follow a figure clause	No	(Dum-Tragut, 2009, pp. 248—249)
Tamil	<i>-kir-atu-kk-ullee</i>	present tense <i>-kir</i> ; nominalizer <i>-atu</i> ; dative <i>-kk</i> ; <i>-ullee</i> ‘within, inside’	precede a figure clause	No	(Lehmann, 1993, p. 306)
Tundra Nenets	<i>-wa... n'er^oc'una... -c^{’o}</i>	imperfective action nominal <i>-wa</i> ; <i>n'er^oc'una</i> ‘right before’; past tense like <i>-c^{’o}</i>	precede a figure clause	No	(Nikolaeva, 2014, pp. 82; 369)
Japhug	<i>tyk^ha</i>	linker ‘about to’ in a factual non-past clause	precede a figure clause	No	(Jacques, 2021, p. 1399)
	<i>ju-</i>	proximative prefix	precede a figure clause	No	(Jacques, 2021, p. 1400)
	<i>pu-ŋu</i>	Periphrastic Proximative construction consisting of a 3SG copula <i>ŋu</i> and a TAME marking such as <i>pu-</i> ‘past imperfective’ in a factual non-past clause	precede a figure clause	No	(Jacques, 2021, p. 1167)

Cantonese	<i>jat1...(zil)cin4</i>	<i>jat1</i> ‘as soon as’; <i>(zil)cin4</i> ‘before’	precede a figure clause	Yes	(Lui, 2023)
Karbi	<i>aphráng~aphráng</i>	<i>aphráng</i> ‘before’ is reduplicated, but no examples where only a single <i>aphráng</i> ‘before’ are found, therefore this strategy is not treated as a derivation of GENPREC constructions	precede a figure clause	No	(Konnerth, 2014, p. 163)
Limbu	Asyndetic	/	precede a figure clause	No	(van Driem, 1987, p. 119)
Purik Tibetan	<i>-k^himaruk-p-j-an</i>	<i>k^himaruk</i> ‘about to’; <i>-p</i> ‘definite article’; genitive <i>-j</i> ; <i>-an</i> ‘inessive’	precede a figure clause	No	(Zemp, 2018, p. 487)
	<i>ma...-pa-r-ik</i>	<i>ma</i> ‘negator’; <i>-pa</i> ‘infinitive’; <i>-r</i> ‘augmentative’; <i>-ik</i> ‘indefinite article’	precede a figure clause	No	(Zemp, 2018, pp. 154—155; 810)
Qiang	<i>a:</i>	prospective aspect	precede a figure clause	No	(LaPolla & Huang, 2003, p. 162)
Bjokapakha	<i>camp-pa=ga</i>	<i>camp</i> ‘be about’; past nominalizer <i>-pa</i> ; locative <i>=ga</i>	precede a figure clause	No	(Grollmann, 2020, p. 148)
Duhumbi	<i>-rinpra-k^ho</i>	<i>-rinpra</i> ‘about to’ and locative <i>-k^ho</i>	precede a figure clause	No	(Bodt, 2020, p. 609)
Shixīng	^L <i>tɕi</i> - ^H <i>tɕi</i> ^L <i>bɜ</i>	^L <i>tɕi</i> - ^H <i>tɕi</i> ‘do-do’; ^L <i>bɜ</i> ‘make’	precede a figure clause	Unknown	(Chirkova, 2009, p. 81)
Daai Chin	<i>üngta...-in</i>	<i>üngta</i> ‘when’; mirative <i>-in</i>	precede a figure clause	No	(So-Hartmann, 2009, p. 337)
Xiang dialects	<i>tsən⁴⁵man¹³iau⁴⁵</i>	<i>tsən⁴⁵man¹³</i> ‘just about to’; auxiliary <i>iau⁴⁵</i> ‘to want’	precede a figure clause	No	(Wu, 2005, p. 142)

Tshangla	<i>ren-</i>	‘be about to; ready; prepare’	precede a figure clause	No	(Andvik, 2010, p. 142)
Ute	<i>-vaa-kw...</i> <i>-kwa</i>	irrealis <i>-vaa</i> ; subordinator <i>-kw</i> ; <i>-kwa</i> ‘go’	precede a figure clause	Unknown	(Givón, 2011, p. 360)
Central Alaskan Yupik	<i>-qatar</i>	imminent marker ‘to be about to’	precede a figure clause	No	(Miyaoaka, 2012, pp. 1069; 613)
	<i>nall’arr</i>	‘hit’	precede a figure clause	No	(Miyaoaka, 2012, p. 581)
Balantak	<i>sian-po ...liu-liu</i>	negator <i>sian</i> and imperfective <i>po</i> denote ‘not yet, before’ together; <i>liu-liu</i> ‘immediately’ which is a reduplication of <i>liu</i> ‘go past’	precede a figure clause	Yes (Although no examples are found in the source, <i>sian-po</i> is explicitly stated as a GENPREC marker)	(van den Berg & Busenitz, 2012, p. 236)
Toqabaqita	<i>laalae qoki...naqa</i>	<i>laalae</i> ‘when’; a future subject like <i>qoki</i> ‘2SG.FUT’ indicates that the subordinate event happens before the figure-clause event; perfect <i>naqa</i> is used to denote ‘about to’	precede a figure clause	No	(Lichtenberk 2008, pp. 717; 788; 1179—1181)
Rapa Nui	<i>oho...mo</i>	<i>oho</i> ‘go, about to’; complementizer <i>mo</i>	precede a figure clause	No	(Kieviet, 2017, p. 523)
Adang	<i>eham</i>	inceptive	precede a figure clause	Unknown	(Haan, 2001, p. 94)
Duna	<i>-nda ka-ta</i>	intensive <i>-nda</i> ; <i>ka-</i> ‘be, stand’; sequential <i>-ta</i>	precede a figure clause	Unknown	(San Roque, 2008, p. 214)
Momu	<i>=meni/=menu</i>	inceptive; desiderative	precede a figure clause	Unknown	(Honeyman, 2016, pp. 411—412)

Savosavo	<i>tei</i>	‘want to do’	precede a figure clause	Unknown	(Wegener, 2012, pp. 259; 269)
Urama	<i>ri a'ai tabo</i>	complementizer <i>ri</i> ; auxiliary <i>a'ai</i> ‘do’ that denotes near future; locative like <i>tabo</i>	precede a figure clause	No	(Brown et al., 2016, pp. 89)
Coastal Marind	<i>oso m-</i>	<i>oso</i> ‘start’; object orientation <i>m-</i> . Together they denote ‘just before to X’, ‘just V-ed’	precede a figure clause	Unknown	(Olsson, 2021, p. 490)
Komnzo	<i>n</i>	imminent particle ‘try to do X’ or ‘be about to do X’	precede a figure clause	Unknown	(Döhler, 2018, pp. 248; 402)
Abawiri	<i>-rē ber</i>	irrealis <i>-rē</i> ; <i>ber</i> ‘do’; they are used in a prospective serial verb construction	precede a figure clause	No	(Yoder 2020, pp. 343; 354)
Konai	<i>hafei dege-i</i>	<i>hafei</i> ‘close’; <i>dege</i> ‘do’; non-future <i>-i</i>	precede a figure clause	No	(Årsjö, 2016, p. 199)
Bargam	<i>-nan</i>	desiderative	precede a figure clause	Unknown	(Hepner, 2006, p. 31)
Kaluli	<i>-a:nig-o:</i>	immediate marker <i>-a:nig</i> ; first-person future <i>-o:</i>	precede a figure clause	Unknown	(Grosh & Grosh, 2004, p. 36)
Nukna	<i>haing hang</i>	‘about to become light’	precede a figure clause	Unknown	(Taylor, 2015, p. 237)
Cavineña	<i>=wie</i>	‘just before’	precede or follow a figure clause	No	(Guillaume, 2008, pp. 720—721)
Paunaka	<i>nakayenetu</i>	‘almost’	precede a figure clause	Unknown	(Terhart, 2024, p. 206)

Yauyos Quechua	<i>-paq</i>	purposive	follow a figure clause	Unknown	(Shimelman, 2017, p. 295)
Movima	<i>buda</i>	‘front’	follow a figure clause	Unknown	(Haude, 2006, p. 513)
Yurakaré	<i>-nishi</i>	near completive ‘right before’	precede a figure clause	No	(van Gijn, 2006, p. 195)
Kwaza	<i>-nã...-wy</i>	future tense marker <i>-nã</i> ‘be going to, want to’; <i>-wy</i> ‘time’	precede a figure clause	No	(van der Voort, 2004, pp. 397; 651)
Mapuche	<i>ñall...-(y)a</i>	<i>ñall</i> ‘just’; <i>-(y)a</i> ‘non-realized’	precede a figure clause	No	(Smeets, 2008, pp. 220; 236)

Appendix C

Table C1 examines whether a negator is found in IMPREC clauses in 50 languages. A negator may always be found, occasionally found or not found in IMPREC clauses. The strategies of denoting IMPREC can be monofunctional or polyfunctional.

Table C1. the existence of a negator in and functionality of IMPREC clauses in 50 languages

Language	Strategy	Negator	monofunctional/ polyfunctional	Source
Wolaytta	<i>-aná... sint-áa-ni</i>	not found	monofunctional	(Wakasa, 2008, pp. 882—883)
Ma’di	<i>iré</i>	not found	monofunctional	(Blackings & Fabb, 2003, p. 674)
Mungbam	<i>tê...tí</i>	not found	monofunctional	(Lovegren, 2013, pp. 384—385)
Bininj Gunwok	<i>wanjh...ninj</i>	not found	monofunctional	(Evans, 2003, p. 655)
Diyari	<i>ɲampu</i>	not found	monofunctional	(Austin, 1978, p. 492)
Djinba	<i>nyinuk...-mitj</i>	not found	monofunctional	(Waters, 1989, p. 386)
Innaminka	<i>-ma ngana</i>	not found	monofunctional	(Breen, 2004, p. 133)

Ngan'gityemerri	<i>-ngini/ne ...epe</i>	not found	monofunctional	(Reid, 1990, pp. 173—174)
Sri Lanka Malay	<i>mà...kapang</i>	not found	polyfunctional (‘when’)	(Nordhoff, 2009, pp. 283—284; 782)
English	<i>shortly before</i>	not found	monofunctional	personal knowledge; (COCA)
	<i>right before</i>	not found	monofunctional	personal knowledge; (COCA)
	<i>just before</i>	not found	monofunctional	personal knowledge; (COCA)
	<i>immediately before</i>	not found	monofunctional	personal knowledge; (COCA)
Russian	<i>pered t-em kak</i>	not found	monofunctional	(Wade, 2011, p. 500; Bernard Comrie p.c.)
Modern Eastern Armenian	<i>-u...lin-em</i>	not found	monofunctional	(Dum-Tragut, 2009, pp. 248—249)
Tamil	<i>-kir-atu-kk-ullee</i>	not found	monofunctional	(Lehmann, 1993, p. 306)
Tundra Nenets	<i>-wa... n'er^oc'una... -c'^o</i>	not found	monofunctional	(Nikolaeva, 2014, pp. 82; 369)
Japhug	<i>tyk^ha</i>	not found	monofunctional	(Jacques, 2021, p. 1399)
	<i>ju-</i>	not found	monofunctional	(Jacques, 2021, p. 1400)
	<i>pu-ŋu</i>	not found	monofunctional	(Jacques, 2021, p. 1167)
Cantonese	<i>jat1... (zi1)cin4</i>	not found	monofunctional	(Lui, 2023)
Karbi	<i>aphráng~ aphráng</i>	not found	monofunctional	(Konnerth, 2014, p. 163)
Limbu	Asyndetic	not found	/	(van Driem, 1987, p. 119)
Purik Tibetan	<i>-k^himaruk-p-j- aŋ</i>	not found	monofunctional	(Zemp, 2018, p. 487)

	<i>ma...-pa-r-ik</i>	always found	monofunctional	(Zemp, 2018, pp. 154—155; 810)
Qiang	<i>a:</i>	not found	monofunctional	(LaPolla & Huang, 2003, p. 162)
Bjokapakha	<i>camp-pa=ga</i>	not found	monofunctional	(Grollmann, 2020, p. 148)
Duhumbi	<i>-rinpra-k^ho</i>	not found	monofunctional	(Bodt, 2020, p. 609)
Shìxīng	<i>^Ltei-^Htei^Lb3</i>	not found	monofunctional	(Chirkova, 2009, p. 81)
Daai Chin	<i>üngta...-in</i>	not found	monofunctional	(So-Hartmann, 2009, p. 337)
Xiang dialects	<i>tsən⁴⁵man¹³ iau⁴⁵</i>	not found	monofunctional	(Wu, 2005, p. 142)
Tshangla	<i>ren-</i>	not found	monofunctional	(Andvik, 2010, p. 142)
Ute	<i>-vaa-kw... -kwa</i>	not found	monofunctional	(Givón, 2011, p. 360)
Central Alaskan Yupik	<i>-qatar</i>	not found	monofunctional	(Miyaoaka, 2012, pp. 1069; 613)
	<i>nall'arr</i>	not found	monofunctional	(Miyaoaka, 2012, p. 581)
Balantak	<i>sian-po...liu-liu</i>	always found (only one example is found)	monofunctional	(van den Berg & Busenitz, 2012, p. 236)
Toqabaqita	<i>laalae qoki ...naqa</i>	not found	monofunctional	(Lichtenberk, 2008, pp. 788; 1179—1181)
Rapa Nui	<i>oho...mo</i>	not found	monofunctional	(Kieviet, 2017, p. 523)
Adang	<i>eham</i>	not found	monofunctional	(Haan, 2001, p. 94)
Duna	<i>-nda ka-ta</i>	not found	monofunctional	(San Roque, 2008, p. 214)
Momu	<i>=meni/=menu</i>	not found	monofunctional	(Honeyman, 2016, pp. 411—412)
Savosavo	<i>tei</i>	not found	monofunctional	(Wegener, 2012, pp. 259; 269)

Urama	<i>ri a'ai tabo</i>	not found	monofunctional	(Brown et al., 2016, p. 89)
Coastal Marind	<i>oso m-</i>	optionally found (frustrative <i>um-</i>)	polyfunctional ('as soon as')	(Olsson, 2021, p. 490)
Komnzo	<i>n</i>	not found	monofunctional	(Döhler, 2018, pp. 248; 402)
Abawiri	<i>-rē ber</i>	not found	monofunctional	(Yoder, 2020, pp. 343; 354)
Konai	<i>hafei dege-i</i>	not found	monofunctional	(Årsjö, 2016, p. 199)
Bargam	<i>-nan</i>	not found	monofunctional	(Hepner, 2006, p. 31)
Kaluli	<i>-a:nig-o:</i>	not found	monofunctional	(Grosh & Grosh, 2004, p. 36)
Nukna	<i>haing hang</i>	not found	monofunctional	(Taylor, 2015, p. 237)
Cavineña	<i>=wie</i>	not found	monofunctional	(Guillaume, 2008, pp. 720—721)
Paunaka	<i>nakayenetu</i>	not found	monofunctional	(Terhart, 2024, p. 206)
Yauyos Quechua	<i>-paq</i>	not found	monofunctional	(Shimelman, 2017, p. 295)
Movima	<i>buda</i>	not found	monofunctional	(Haude, 2006, p. 513)
Yurakaré	<i>-nishi</i>	not found	monofunctional	(van Gijn, 2006, p. 195)
Kwaza	<i>-nã...-wy</i>	not found	monofunctional	(van der Voort, 2004, pp. 397; 651)
Mapuche	<i>ñall...-(y)a</i>	not found	monofunctional	(Smeets, 2008, pp. 220; 236)

Appendix D

Table D1 listed out the strategies of general precedence (GENPREC) constructions in 50 languages. A negator may always be found, occasionally found or not found in GENPREC clauses. The position of GENPREC clauses is viewed relative to figure clauses. It can precede a figure clause or follow it.

Table D1. strategies of GENPREC constructions, the existence of a negator in and position of GENPREC clauses in 50 languages

Language	Strategy	PoS/construction	Negator	Position of GENPREC clauses	Source
Wolaytta	<i>-enn-aa-ni</i>	negative infinitive <i>-enn</i> ; oblique <i>-aa</i> ; <i>-ni</i> ‘in, at, by’	always found	precede a figure clause	(Wakasa, 2008, p. 940)
	<i>-aan-áa-shiina</i>	infinitive <i>-aan</i> ; oblique like <i>-áa</i> ; <i>-shinna</i> ‘while’	not found	precede or follow a figure clause	(Wakasa, 2008, pp. 928—929)
	<i>-ana-g-áa-ppe kas-é</i>	future relative <i>-ana</i> ; nominalizer <i>-g</i> ; oblique <i>-áa</i> ; <i>-ppe</i> ‘from’; <i>kas</i> ‘before’; absolutive <i>-é</i>	not found	precede a figure clause	(Wakasa, 2008, p. 884)
Ma’di	<i>mū</i>	<i>mū</i> ‘go’	not found	precede or follow a figure clause	(Blackings & Fabb, 2003, p. 432)
	<i>tǎ</i>	<i>tǎ</i> ‘reach’	optionally found	precede a figure clause	(Blackings & Fabb, 2003, pp. 432—433)
Mungbam	<i>bǎjsǎ</i>	<i>bǎjsǎ</i> ‘before’	not found	follow a figure clause	(Lovegren, 2013, p. 268)
Bininj Gunwok	not found	/	/	/	(Evans, 2003, p. 655)
Diyari	<i>-ṇaṇtu</i>	implicated clause marker <i>-ṇaṇtu</i>	not found	follow a figure clause	(Austin, 1978, p. 366)
Djinba	not found	/	/	/	(Waters, 1989, p. 386)
Innaminka	asyndetic	asyndetic	optionally found	follow a figure clause	(Breen, 2004, pp. 147; 192)
Ngan'gityemerri	asyndetic	asyndetic	not found	precede a figure clause	(Reid, 1990, p. 345)

Sri Lanka Malay	= <i>nang</i> <i>dupang</i>	dative = <i>nang</i> used in a ‘before’ clause; <i>dupang</i> ‘before’	not found	precede a figure clause	(Nordhoff, 2009, pp. 181; 626)
	= <i>nang</i> <i>(kà)thaama</i>	dative = <i>nang</i> used in a ‘before’ clause; <i>(kà)thaama</i> ‘before’	not found	precede a figure clause	(Nordhoff, 2009, p. 626)
English	<i>before</i>	before	not found	precede or follow a figure clause	personal knowledge; (COCA)
Russian	<i>poka...ne</i>	before...NEG	always found	follow a figure clause	(Wälchli, 2018)
Modern Eastern Armenian	<i>-uc’araj</i>	ablative like <i>-uc’</i> ; posterior <i>araj</i>	not found	precede or follow a figure clause	(Dum-Tragut, 2009, pp. 489; 518— 519)
	<i>minč’ew</i>	<i>minč’ew</i> ‘until’	not found	precede a figure clause	(Dum-Tragut, 2009, p. 436)
	<i>naxk’an</i>	<i>naxk’an</i> ‘before’	not found	follow a figure clause	(Dum-Tragut, 2009, pp. 434—435)
Tamil	<i>-kir-atu-kku</i> <i>munnaal</i>	present tense <i>-kir</i> ; nominalizer <i>-atu</i> ; dative like <i>-kku</i> ; <i>munnaal</i> ‘before’	not found	precede a figure clause	(Lehmann, 1993, p. 306)
	<i>mun</i>	<i>mun</i> ‘before, anteriority’	not found	precede a figure clause	(Lehmann, 1993, p. 342)
Tundra Nenets	<i>n'er°n'a</i>	<i>n'er°n'a</i> ‘before’	not found	precede a figure clause	(Nikolaeva, 2014, p. 447)
	<i>-n°h</i>	dative <i>-n°h</i>	not found	precede a figure clause	(Nikolaeva, 2014, p. 368)
	<i>yolc'ant°h</i>	<i>yolc'ant°h</i> ‘until’	not found	precede a figure clause	(Nikolaeva, 2014, p. 370)

Japhug	<i>ɲu-... ɛwŋgu</i>	imperfective <i>ɲu-</i> ; <i>ɛwŋgu</i> ‘before’	not found	precede a figure clause	(Jacques, 2021, p. 1399)
Cantonese	之前 <i>zilcin4</i>	之前 <i>zilcin4</i> ‘before’	optionally found	precede or follow a figure clause	(Matthews & Yip, 2011, p. 344; personal knowledge)
Karbi	<i>akò</i>	<i>akò</i> ‘before’	always found	precede or follow a figure clause	(Konnerth, 2014, pp. 411; 620)
Limbu	<i>pəile·</i>	<i>pəile·</i> ‘first’	not found	precede a figure clause	(van Driem, 1987, p. 53)
Purik Tibetan	<i>ma...-tsa- na</i>	negator <i>ma</i> ; limitative <i>-tsa</i> ; conditional <i>-na</i>	always found	precede a figure clause	(Zemp, 2018, pp. 793; 797)
	asyndetic	/	not found	precede a figure clause	(Zemp, 2018, p. 824)
Qiang	<i>ma-tei-...- tɛ</i>	negator <i>ma-</i> ; continuative <i>tei-</i> ; genitive <i>-tɛ</i>	always found	follow a figure clause	(LaPolla & Huang, 2003, p. 241)
Bjokapakha	<i>ma-...-kha goma</i>	negator <i>ma-</i> ; perfective nominalizer <i>-kha</i> ; <i>goma</i> ‘before’	always found	no example found	(Grollmann, 2020, pp. 284—285)
Duhumbi	<i>ba-</i>	negator <i>ba-</i>	always found	precede a figure clause	(Bodt, 2020, pp. 385; 546)
Shixīng	not found	/	/	/	(Chirkova, 2009)
Daai Chin	<i>hlaan</i>	<i>hlaan</i> ‘before’	not found	precede a figure clause	(So- Hartmann, 2009, p. 336)
Xiang dialects	<i>xai¹³mau²¹</i>	<i>xai¹³mau²¹</i> ‘[lit. yet not]’	always found	precede a figure clause	(Wu, 2005, p. 235)
Tshangla	<i>ma-...-la- (a)n cho-la- gai goma</i>	negator <i>ma-</i> ; Other participial suffix <i>-la</i> ;	always found	precede a figure clause	(Andvik, 2010, pp. 294—295)

		subordinator <i>-an</i> ; <i>cho</i> ‘stay’; ablative <i>-gai</i> ; <i>goma</i> ‘before’			
	<i>ma-...-lai/-le goma</i>	negator <i>ma-</i> ; Other participial- ablative suffix- <i>lai/-le</i> ; <i>goma</i> ‘before’	always found	precede a figure clause	(Andvik, 2010, p. 295)
Ute	not found	/	/	/	(Givón, 2011)
Central Alaskan Yupik	<i>-paily</i>	<i>-paily</i> ‘before’	not found	precede or follow a figure clause	(Miyaoka, 2012, pp. 944; 1395)
Balantak	<i>sian-po</i>	<i>sian-po</i> (NEG IMPF) ‘not yet’	always found	precede a figure clause	(van den Berg & Busenitz, 2012, pp. 235—236)
	<i>koo'-po</i>	<i>koo'-po</i> (NEG IMPF) ‘not yet’	always found	precede a figure clause	(van den Berg & Busenitz, 2012, pp. 235; 268)
Toqabaqita	<i>aqi</i>	negator <i>aqi</i>	always found	follow a figure clause	(Lichtenberk, 2008, p. 1177)
Rapa Nui	<i>mai</i>	<i>mai</i> ‘from, before’ which often co- occurs with the constituent negator <i>ta'e</i>	optionally found	follow a figure clause	(Kieviet, 2017, p. 555)
	<i>e ko... hia</i>	imperfective <i>e</i> ; negative imperfective <i>ko</i> ; <i>hia</i> ‘yet’	always found	precede a figure clause	(Kieviet, 2017, p. 509)
	<i>'i ra'e ki</i>	<i>'i</i> ‘at’; <i>ra'e</i> ‘first’; <i>ki</i> ‘to’	not found	follow a figure clause	(Kieviet, 2017, p. 563)
	<i>ante ki</i>	<i>ante</i> ‘before’; <i>ki</i> ‘to’	not found	precede a figure clause	(Kieviet, 2017, p. 563)
	<i>'ō ira</i>	<i>'ō ira</i> ‘before’	not found	precede a figure clause	(Kieviet, 2017, p. 563)

Adang	not found	/	/	/	(Haan, 2001)
Duna	not found	/	/	/	(San Roque, 2008)
Momu	not found	/	/	/	(Honeyman, 2016, pp. 411–412)
Savosavo	not found	/	/	/	(Wegener, 2012, pp. 259; 269)
Urama	<i>epu=i ta</i>	<i>epu</i> ‘head’; definite article = <i>i</i> ;locative <i>ta</i>	not found	precede a figure clause	(Brown et al., 2016, pp. 39; 48)
Coastal Marind	not found	/	/	/	(Olsson, 2021)
Komnzo	not found	/	/	/	(Döhler, 2018, pp. 248; 402)
Abawiri	asyndetic	/	not found	follow a figure clause	(Yoder, 2020, p. 536)
Konai	<i>mei</i>	negator <i>mei</i>	always found	precede a figure clause	(Årsjö, 2016, pp. 109; 199)
	<i>you</i>	<i>you</i> ‘not yet’	always found	precede a figure clause	(Årsjö, 2016, p. 199)
Bargam	not found	/	/	/	(Hepner, 2006)
Kaluli	not found	/	/	/	(Grosh & Grosh, 2004)
Nukna	not found	/	/	/	(Taylor, 2015)
Cavineña	<i>-ma</i>	negator <i>-ma</i>	always found	precede a figure clause	(Guillaume, 2008, p. 180)
	<i>=ishu</i>	purposive <i>=ishu</i>	not found	precede or follow a figure clause	(Guillaume, 2008, pp. 709; 788)
Paunaka	not found	/	/	/	(Terhart, 2024)

Yauyos Quechua	not found	/	/	/	(Shimelman, 2017, p. 295)
Movima	not found	/	/	/	(Haude, 2006, p. 513)
Yurakaré	<i>-shita/-shti</i>	future marker like <i>-shita</i> or <i>-shti</i>	not found	precede or follow a figure clause	(van Gijn, 2006, p. 309)
Kwaza	<i>a-'wy/-wy...-tsi/-he</i>	empty adverbial root <i>a-</i> ; <i>-'wy</i> or <i>-wy</i> 'time'; monitory (i.e. prohibitive) <i>-tsi</i> or the negator <i>-he</i>	always found	precede a figure clause	(van der Voort, 2004, pp. 324; 509)
	<i>da'nỹ...-he...-wy</i>	<i>da'nỹ</i> 'still'; negator <i>-he</i> ; <i>-wy</i> 'time'	always found	precede a figure clause	(van der Voort, 2004, pp. 490; 507; 509)
	asyndetic	/	not found	follow a figure clause	(van der Voort, 2004, p. 660)
Mapuche	<i>petú...-nu-(ü)n</i>	<i>petú</i> 'still'; <i>-nu</i> NEG	always found	precede or follow a figure clause	(Smeets, 2008, p. 196)